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EDITOR'S COMMENTS

THIS Summer issue of the Neptune has articles that fall into three categories. The first one, which continues a theme found in our Winter offerings, concerns women in relation to the sea and seafaring. One article in this group, by John F. Battick, examines thirty-six wives of Searsport, Maine in the 1880's—interesting because it helps to destroy many stereotypes concerning women in this period patiently pacing widow's walks while their husbands ventured forth on the dark waters. A second, by Evelyn M. Cherpak, gives us an interesting glimpse of the lives of American Navy wives in the China of the Warlords during the 1920's—a China which no longer exists.

Two other articles by Jonathan Dull and James Valle strike a different note. They are concerned with the early concepts of a navy during the formative period of our national history. The first, by Dull entitled 'Was the Continental Navy a Mistake?' makes it clear how little the Continental Congress understood the nature of sea power during the American Revolution. The second, by Valle critically examines American naval doctrine during the War of 1812 and finds it almost as flawed as it was during the earlier period. Only several decades later did Americans begin to understand sea power and its proper use.

Last of all we have two articles dealing with science as it affected maritime matters. The first by Dr. Eleanora C. Gordon tells us in horrifying detail how scurvy affected Anson's round the world voyage in the mid-eighteenth century—a story which makes the mutiny on the *Bounty* completely understandable. And last of all we have a piece by Kenneth Donovan which tells how a French lieutenant established an observatory at Louisbourg in the 1750's—an event which is especially interesting because it reveals scientific interests in the world of New France which parallel those in the British Colonies to the south. This is, of course, especially appropriate to print during a summer when the maritime community is celebrating the French discovery of the Saint Lawrence and how they established their claim to Quebec.

Turning now to the book reviews, it might be worthwhile noting that we have two which might interest yachtsmen—one by the editor on the history of the Boston Yacht Club and another by Philip Weld dealing with a volume of recent yacht designs. It is our hope that this will be the beginning of a whole series of articles which enlighten us on this important present-day maritime enterprise.

Two last subjects also need to be emphasized. We hope those who are interested in increasing their maritime libraries, either on an individual or institutional basis, will take advantage of our lowered rates for acquiring back volumes or issues of the *Neptune*.

We also want to call attention to the fact that important bills are being considered in Congress which will stop the plundering of underwater wrecks in all our offshore and inland waters. Since these bills are being ferociously opposed by the treasure hunters who are responsible for the destruction of much of our maritime heritage, we urge all of you to send in letters urging speedy enactment of these bills with no further amendments. Such letters should be directed to local senators and congressmen and to Congressman Walter B. Jones, Chairman, House Committee on Merchant Marine and Fisheries, 1334 Longworth H.O.B., Washington, D.C. 20515.

ARCHIBALD R. LEWIS

Salem, Massachusetts

The Searsport 'Thirty-six': Seafaring Wives of a Maine Community in 1880

By John F. Battick

In just the last few years, writing about women who went to sea has become what might be called a 'growth industry.' The rate of publication on women at sea over the past half century was, while not zero, well below that of works on ships and seafaring men. But spurred by feminist activism, interest in women's history finally reached the sea in the late 1970's. To cite just a few examples, the late James Balano's edition of his mother's diary, published as *The Log of the Skipper's Wife,* appeared in 1979. In 1980, Basil Greenhill and Ann Gifford published *Women Under Sail,* and Julianna FreeHand's *A Seafaring Legacy,* published in 1981, though concerned with the life-spans of a Falmouth, Maine, couple, is based essentially upon the diary of the wife. And last year, George Washington University professor Linda Grant De Pauw published *Seafaring Women,* a popularized survey of women at sea, primarily since around 1700.[1] Over the past twelve months, the Pirate Queen of the South China Sea, the redoubtable Ching Yih, has been the subject of several short articles, as well as six pages in De Pauw.

While these, among similar efforts, are to be commended for focusing attention upon a relatively neglected facet of maritime history, they all suffer from a common failing: the concentration is upon either the anecdotal and unusual, or upon the unique experiences of a very few individuals. We read of these whose diaries have survived, or who in later years wrote their reminiscences for publication. James Balano's mother, Dorothea Moulton Balano, followed the usual habit of keeping a daily diary up to the advent of its future editor, after which she had her hands and days full of him. Alice Drinkwater's diary was fortuitously uncovered by a non-related freelance writer-photographer who theretofore had had no interest in the sea, but who recognized a splendid publication opportunity. Joanna Colcord Bruno's reminiscences about her childhood at sea graced the earliest numbers of the *American Neptune,* from whence she and brother 'Linc' have become minor folk heroes.[2] But these are essentially 'one-shot' narratives, entertaining, even enlightening of a seldom-glimpsed aspect of seafaring, yet still unique, at a par with Snow's *Women of the Sea* (1962). Like De Pauw's popularization, they lack an essential element of sound historical and anthropological study, a broad sampling of the group the main characters represent. And while we might believe we understand what the lives of seafaring wives and children were like from these fragmentary accounts, we cannot generalize for the group from these limited, self-selecting histories. Nor have heretofore published accounts enabled us to grasp the peculiar part which women played in seafaring communities.

In order to grasp that role, in order to more accurately generalize, we must borrow sampling techniques from the social sciences. We need to establish a conceptual framework so that we may ask appropriate questions. And finally, we must present a rationale for undertaking the task, that is, we must answer the all-too-frequently neglected question, 'so what?'

Let us answer the last question first.

Why bother to learn about seafarers' wives? What can such a study reveal that cannot be learned from accounts of the men? Were women really important enough to merit such efforts?

Such questions can no longer stand as programs of women's studies and family studies make it apparent that we must reexamine, rethink, and rewrite human history. Economic history has heretofore lumped all workers together and assumed that only men performed economic work. That isn't true! Social history has heretofore ex-

1. James W. Balano, ed., *The Log of the Skipper's Wife* (Camden, Maine: Down East Books, 1979); Basil Greenhill and Ann Gifford, *Women Under Sail* (Newton Abbot: David & Charles, 1980); Juliana FreeHand, ed., *A Seafaring Legacy, the Photographs, Diaries, Letters and Memorabilia of a Maine Sea Captain and His Wife, 1859-1908* (N.Y.: Random House, 1981); Linda Grant De Pauw, *Seafaring Women* (Boston: Houghton Mifflin, 1982). Also, see Edward Rowe Snow, *Women of the Sea* (N.Y.: Dodd, Mead & Company, 1962).

2. Joanna C. Colcord, 'Domestic Life on American Sailing Ships,' *American Neptune,* 2 (1942), 193-202.

amined the American family through a patriarchal perspective, based largely on male-dominated political and legal records. And in maritime history, because the vessels and counting houses seemed to have been overwhelmingly men's domain, we have assumed that the other half of society had little or nothing to do with maritime commerce.

Time will not permit examination of the many fallacies alluded to. I will merely remind you that every person has a mother, every husband a wife, and that usually a little more than half of every population is female to make the point that the experiences and significance of half of our society cannot be ignored.

As a sailor's son, I cannot forget how much more important my mother was in my upbringing than was my father. And I suspect that many men loved the seafaring life because of its isolation from the shore, the self-contained ship's community; the absence, under sail, of deadlines and due dates relieved them of tedious responsibilities set, not by implacable nature, but by niggling, opportunistic, demanding and obstreperous humans.

Our patriarchal society emphasizes the father's role and name. But in such undertakings as shipbuilding, ship owning, and manning, which bound many coastal communities together, marriage links were of tremendous importance. The Searsport dynasties of Nicholses, Pendletons, Carvers, etc., perpetuated themselves by intermarrying with the same intensity with which their sea-brought earnings were jointly invested. Sons-in-law were found mates' and masters' berths in family ships. Daughters inherited vessel shares which, combined with those of their husbands, established the risk-limiting, broad-spread pattern of community ownership of vessels. And in at least one instance I am aware of, a family's fortune in ship shares was protected from possible liens against a shipbuilder husband by transferring them all into the wife's name.[3]

And finally, women in seafaring communities provided, under especially trying circumstances, the emotional cohesiveness, as well as nurture, which prepared their children for the world. Life patterns geared to farm or factory are very different from those geared to seafaring. Where the farm wife or millhand's wife had the assurance of daily contact with her spouse, the sailor's wife had not. Where his might be the primary decision-making role, where his the disciplinarian-role model for sons, the sailor's wife must bear the major, and frequently total, responsibility for these and many other duties. Among seafarers, the social role of women is of much greater significance than in most other occupational groups. Therefore, to better understand how our seafaring communities lived, thrived and adjusted we must heed Abigail Adams' admonition and 'don't forget the ladies.'

Having validated, I believe, our undertaking, we must define a conceptual framework and form appropriate questions. This involves defining the group we shall study and discerning what factors might be of general and of particular significance for our sample.

In practical terms, our primary group will be defined by husbands' occupations, i.e., seafaring. Subgrouping is functionally defined: shipmasters, mates, seamen, steamboat hands, fishermen, etc. Each subgroup may involve different social, behavioral parameters. For example, seamen's wives might enjoy lower levels of wealth and of social status than masters' wives, shipboard life being inherently hierarchical as were economic rewards. As steamboats operated to schedule, wives of their crew members would have different degrees of independence or of self-reliance than the wives of bluewater crew members. And as fishermen were seasonal workers, essentially day-sailors, their wives would have workplace-domicile patterns different from other subgroups.

For this paper, it is the subgroup masters' wives which will be examined for the simple reason that this group is the easiest to isolate and most numerous in the region I am studying. This will be divided into two categories: 'at sea in 1880,' and 'stay-at-homes in 1880' for reasons shortly to appear.

The specific questions to be asked will also be formulated a bit later in the paper, for I must now describe a very vexing problem which dogs my studies. The fact is, that social scientists have not yet developed the historical statistics of the State of Maine in the nineteenth century. That is, the research on social and demographic problems have focused on specific communities and ethnic groups such as Bangor-Irish, Lewiston-Francos, Portland skilled and unskilled laborers, etc. To my knowledge no one has studied, or is now studying, aggregate statewide statistics. Thus, I have no basis of accurate comparison for the phenomena I am about to describe so as to establish whether and in what ways, our seafarers' wives lived substantially different lives from their landbound sisters. We have statistical base studies for the twentieth cen-

3. Examination of the Town Assessors' Books in the town office at Searsport shows that up to 1870, Daniel S. Goodell's taxable property, including shares in seven or eight vessels was in his name entirely. From 1870, all but a small piece of real property was in the name of his wife, Mary Grant Goodell.

tury,[4] but by that period the great age of Maine-at-sea, for that matter the nation-at-sea, was over, and there were no more communities in our state which, literally, went to sea.

We turn now to our sample, to the primary group, shipmasters' wives of 1880 in Searsport, and especially to that category which, for attention-getting purposes, I have called 'the Searsport Thirty-six.' And to revive what I suspect is by now a flagging enthusiasm on your part, let me summarize the life-story of one of that number, Clara E. Pendleton Blanchard, born in 1843.[5]

She was the third daughter of Captain Phineas, II, and Wealthy Carver Pendleton. Like her sisters Lillias, Eleanora, Delphine and Matilda, Clara married a seafarer. William H. Blanchard was eight years older than Clara, who was twenty when they wed. Clara bore her first child, a daughter, in Valencia, Spain, in 1864. Over the next nineteen years, she bore seven more children of whom we know, the last arriving in her fortieth year. Her five deliveries away from Searsport were assisted by her husband, who acquired such a reputation as a midwife that other skippers whose wives were 'in a family way' hoped to be in port with Bill and Clara when the time came.

Two of their children died in infancy. Oddly enough, the two, Matilda and William, named after her sister and husband, were of the three not born at sea or abroad. Albert, Frederick and Scott were born at sea; Phineas Banning in California; and young Clara, we have seen, was born at Valencia.

At home, in 1870, William and Clara resided in their own home, between that of her parents and her brother James and his family. Though not as wealthy as either, their household included an English-born domestic servant, as befit the daughter and son-in-law of one of the richest families in town.

William's father, John C. Blanchard, had bought a share in the bark *Wealthy Pendleton,* in partnership with Phineas, II, and others, and William inherited that share. Thus, in 1880, he was at sea, with Clara and four of the five living children, in the bark named for his late mother-in-law. Twelve-year-old Albert was left in the care of Clara's sister, Matilda and her husband, Capt. Alexander Nichols, who resided then with the sisters' widower father, so that Albert might attend school. Since little Phineas Banning Blanchard was only a year old, Clara, junior, fifteen, must have had charge of siblings Eleanora, eight, and Fred, four.

By 1900, Clara's girls were married and rearing their own families. Son Frederick, now twenty-five, had moved from Searsport and was following the sea. Albert, recently married, had brought his bride to live in his parents' home while he was at sea, as was Phineas B., also resident there. Young Scott, sixteen, was attending school.

In 1904, William Blanchard had embarked as a passenger on board son Fred's bark, *William Mudgett,* on charter to carry coal from Norfolk to Bangor. The exercise in nostalgia led to a double tragedy when the bark went missing. Yet when Scott finished his schooling, he too went to sea. Clara's widowhood was saddened by the death of Albert in 1928, but three years later, she followed William.

With Clara's particulars as background, let us now examine the 'Thirty-six.'[6]

That number is the result of a fortuitous circumstance: the fact that the census-taker in Searsport in 1880, one J. W. Black, took the trouble to record which women of the town were 'at sea,' an entry found in very, very few instances in other censuses. Actually one of the thirty-six was Capt. Daniel Blake's eldest daughter, eighteen-year-old Ellie, accompanying him while her step-mother Emma Ford Blake, remained at home to look after the rest of the children. But through other evidence, I located a thirty-sixth wife who went to sea after the census-taker's call, so I had a file of women definitely accompanying their husbands that year. As there were eighty-nine married shipmasters in the census, my thirty-six constitute 40 percent of the total group, a gratifyingly large sample. A scan of the names of the sample and of the larger group revealed that while two prominent families, the Colcords and the Parks, are not represented, five others are: Carver, Field, Nichols, Pendleton and Waterhouse; while of the less-prominent families, an adequate sample appears among the thirty-six. For purposes of comparison, I examined the vital statistics of the fifty-three for whom there is no evidence of being at sea in 1880, and these I refer to as 'the stay-at-homes,' though many of them obviously went to sea at other

4. U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States* (Washington, D.C., various years).

5. This excursis on Clara and William Blanchard is derived from the Federal census schedules for 1850, 1870, 1880, and 1900; Frederick F. Black, *Searsport Sea Captains* (Searsport, Me.: Penobscot Marine Museum, 1960); and tombstones in the Bowditch Cemetery, Searsport, Maine.

6. Hereafter, primary reliance for specific facts is placed on the census schedules for Searsport for 1880. Black's *Sea Captains* and tombstones inscriptions supplied additional details. Analysis of the data derived from these sources was performed using the Statistical Analysis System (SAS) package leased by the Computing and Data Processing Services department of the University of Maine at Orono.

times. We should note that there is no direct, documentary evidence as to why the women chose to venture aboard ship.

But we seem to have, among our thirty-six, a very high proportion, half, as a matter of fact, of women who were following in their mothers' footsteps. Exactly eighteen, those starred on the list, are sea captains' daughters. Of the daughters of Wealthy and Phineas II Pendleton, three are among them, the fourth, Matilda, stayed home, as already noted, in 1880. Three other families had two daughters each at sea, and there were also three pairs of brothers who had taken their wives with them and two brother-sister pairs at sea with their respective spouses.

THE SEARSPORT THIRTY-SIX

Agnes Wilson Black
*Clara E. Pendleton Blanchard
Annie M. Carver
*Ellen Myra Gilkey Carver
*Lydia L. Park Carver
Clara I. Trundy Curtis
*Ella C. Havener Dow
Adelaide A. Nichols Eaton
*Harriet M. Eaton Ellis
Martha A. Pendleton Erskine
*Hannah D. Nichols Ford
*Georgia P. Sawyer Gilkey
Laura Ella Young Griffin
Elizabeth B. Mahoney Havener
*Melvina Devereaux Hichborn
Prudence G. Pendleton McGilvery
*Delphine Pendleton Nichols
Ellen J. Carver Nichols
*Jennie Marie Pendleton Nichols
*Lillias L. Pendleton Nichols
*Elizabeth McGilvery Nickles
*Emma A. Curtis Nickles
Sarah J. Stetson Noyes
Florence Ferguson Pendleton
*Nancy P. Carver Pendleton
Rachel Maria McGlathery Pendleton
*Mary Eliza Griffin Peterson
*Leola A. Merithew Ross
Amanda J. Merithew Small
Dolly C. Decrow Sweetser
Elizabeth J. Nichols Treat
*Alveretta Devereaux Tupper
Catherine N. Black Wallnutt
Maria Whall Waterhouse
*Sarah F. Nichols Waterhouse
Olive Tupper Whittier

The proportion of stay-at-home wives also daughters of masters was about the same as for the thirty-six (46 percent), but there are fewer sets of sisters married to masters, and much less evidence of their accompanying their men to sea, so that in the thirty-six we may be dealing with families in which the practice was more firmly entrenched. Examining the age statistics as of 1880 for both the thirty-six and the stay-at-homes reveals a six-year difference in average age, though the upper and lower extremes were effectively identical. The youngest was Prudence Pendleton McGilvery, twenty-two; the oldest, Sarah Stetson Noyes, fifty-nine. And where the dates of marriage of members of the two groups are known, the statistics show the thirty-six to have been married, on average, five-and-a-half years less than the stay-at-homes. Both groups had approximately the same average number of living children in 1880, but the children of the stay-at-homes were slightly older, on average. Thus we can state that younger wives, those more recently wed, and with younger families are more apt to go to sea. But, the actual extremes, that is, the low and high figures in each category are just about the same:

		'36'	*'S-a-h'*
Age in 1880	low	22	23
	high	59	60
Children in 1880	low	1	1
	high	5	6

Fertility statistics show a consistent similarity as well. There is no statistically significant difference in the total numbers of children born to women in each group: the averages are just about the same, three and one-half children per fertile couple, while infertile marriages are just about identical in numbers, and the largest number of children born to a single family is an identical eight for each group. There is a significantly greater number of children born at sea among the thirty-six than among the stay-at-homes, hence I feel my assertion that the thirty-six represent the segment of Searsport society most accustomed to take wives to sea is further reinforced.

By the way, the average age at marriage for both groups of women was the same: twenty-two; with the low extreme stay-at-home Clarissa Carver, sixteen, and the high, stay-at-home Harriet N. Simpson, thirty-three, though it should be noted that the latter was a second marriage for the husband. The practice of marrying someone from within the town or the immediate locality obviously predominated, but there are, among the thirty-six, two marriages involving foreign-born spouses: Agnes Wilson Black was a native of Liverpool, England, and while she is listed in the censuses as a citizen of Searsport, she appears to have resided in her native country when not at sea with Capt. Dudley Black. And Mary Griffin married a Danish man, Capt. J. Frank Peterson, who adopted his wife's native town. In Agnes's case, she bore four of her six children in England, and as he is buried in Searsport and she is not, one perceives that she never adopted her spouse's country.

Thirteen of the thirty-six gave birth at sea or in foreign ports. The record-holder, of course, was Clara Pendleton Blanchard. The conditions under which children were delivered at sea can well be imagined. We are given to understand that by 1900 it was not uncommon for female relatives to accompany an expectant mother to sea. I find no evidence for this in 1880, though in 1882, Joanna Colcord's birth at sea was aided by an Australian midwife brought along for the occasion. Since the master's wife was usually the only woman on board, and delicacy prohibited any but a physician, midwife, or close relation from assisting delivery, the shipmaster had perforce to add obstetrics to his *ex officio* medical practice. This facet of seafaring life must surely set our ladies and hus-

bands apart from those ashore, long before the present fashions in 'birthing.'

Infant mortality, of course, was very high a century ago, probably no worse for those at sea than for those ashore. Of the 117 children born to the thirty-six, 14 died before the first birthday, a mortality rate of 116 per 1,000 compared to 9.7 per 1,000 for Maine in 1979.[7] Five more did not reach their sixth birthday. As to be expected, male children suffered greater mortality than female. The tragedy of death in childhood struck some more frequently than others. Ellen Gilkey Carver lost five of her six in infancy. Julia Blanchard Pendleton lost three of hers due to disease on the Chilean coast in 1869. While I have not found comparable figures for the general Maine population in the nineteenth century, I would venture to assert that seafaring children were at slightly greater risk due to the absence of professional medical skill, contact with exotic diseases in foreign ports, and the hazards of the sea. On the other hand, isolated from other children for extended periods, they were less liable to contagious contact than their stay-at-home peers.

Education of children at sea seems to have been facilitated by a Maine law of 1827 which reimbursed parents who undertook to teach the required school curriculum themselves. In 1875 school attendance for at least twelve weeks per year was made compulsory for all between nine and fifteen years of age.[8] Seafaring mothers who wished to do so would meet with the local teachers and probably the school committee to go over the subjects to be taught to children of the appropriate schooling backgrounds. Textbooks were either bought or borrowed and school hours held in the officers' saloon or Captain's parlor while away, mother presiding.[9] As navigation is specifically mentioned in the high school curriculum of the 1860's and later, older children, especially the boys, probably received instruction in higher mathematics from mother or father. But since the more advanced subjects were best taught by regular teachers, most seafarers' children did spend a few years ashore where normal schooling would be followed.

Unfortunately, J. W. Black was not as consistent as might be desired in recording the presence or absence of children from the family circle at sea. Of the sixty-two children of the thirty-six alive in 1880, twenty-two (35 percent) are marked 'at sea' and nine (16 percent), 'at school,' presumably left ashore, while thirty-one (50 percent) are not specified either way. By examining the ages of the three groups of children, I am convinced that most, if not all, of the third group were in fact at sea with their parents. Thus, well over half of the children of the thirty-six were at sea. Of those definitely at school, seven of the nine are boys indicating that formal schooling was, as we might expect, deemed more requisite for males than for females, despite Maine laws which sought to end such discrimination. Joanna Colcord recalled that she and brother Lincoln got most of their schooling at sea, but alternated stints at Searsport to 'inhabit the Halls of learning,'[10] but this was somewhat later than 1880. I have not yet completed research into the vocational choices of the children who reached adulthood, but I have found that twelve sons followed the sea, hence the school hours on board and back home merely supplemented their vocational training. Of these, five constituted at least the third generation of seafarers, and three of these were Clara Blanchard's sons. Commissions in the U.S. Naval Reserve were received by three during the First World War, while two others were lost at sea.

None of the thirty-six was lost at sea, though two of the stay-at-homes were: Anna Field Cane in 1889 and Mary Park Pendleton in 1888. In the case of Anna Cane, the entire family were lost in the wreck of the bark *Albert Russell*.[11] Mary Pendleton, her husband, and three children were in the bark *Abbie Carver* which went missing, leaving eleven-year-old Clarence, at school at the time, orphaned.[12] At least three of the thirty-six died while abroad: Ella Havener Dow at Batavia, Java, Adelaide Nichols Eaton at Singapore, and Elizabeth Mahoney Havener at Buenos Aires. While Elizabeth is only memorialized in Village Cemetery, Ella's and Adelaide's remains were brought back to Searsport for interment. Seven (20 percent) of the thirty-six lost their husbands at sea or abroad. Two accounts of these may be interesting.

In 1897, Delphine Pendleton Nichols saw her husband George and son Joseph, master and second mate, respectively, of the ship *Abner Coburn,* sail for Hong Kong. Off the Cape of Good Hope furious seas injured both master and first mate, the former fatally. Twenty-year-old Joseph Nichols had to navigate the vessel until the mate recovered. He also had to bury his father at sea and bear the sad tidings home.[13]

Maria Whall Waterhouse, who may have had her two

7. *Statistical Abstract of the U.S., 1982-1983,* p. 75.

8. State of Maine. Department of Education, *History of Education and the Evolution of the Present School System in Maine* (Augusta: n.p., 1901), pp. 26, 66.

9. FreeHand, p. 46; Colcord, p. 198.

10. Snow, p. 197.

11. Black, p. 39.

12. Ibid., p. 179; monument, Bowditch Cemetery.

13. Black, pp. 147-48; monument, Elmwood Cemetery, Searsport.

sons with her at the time, took command of the ship *S. F. Hersey* in Melbourne when her husband Charles died. Following his interment there, she is said to have faced down a mutiny of the crew with the aid of her late husband's two pistols, backed up by the ship's black cook and his cleavers. When the vessel reached New York, several crewmen were still in chains.[14] To have sailed round the Horn, even west-to-east, in such circumstances is a testimony to courage. This was not an entirely unique experience, but in all others I know of, the wife took command during the voyage rather than at its beginning.[15]

That wives generally survive husbands is another demographic truth. Among the thirty-six, available evidence shows that one-quarter predeceased their husbands. For the rest, the average period of widowhood was about twenty-two years, with the longest that of Delphine Pendleton Nichols, forty-four years.

For the thirty-one whose birth and death dates are known, average longevity was an astonishing seventy-three years. Clara Trundy Curtis lived just over one hundred years, having borne Isabella at Hong Kong, and seeing son Lebbeus become a Rear Admiral during the First World War. Captain Eben, her husband, served as port captain for the American-Hawaiian Steamship Company, in San Francisco, where the couple resided from 1903. The shortest life was that of Ella Havener Dow who passed away at Batavia, only thirty years old, leaving husband Leroy, and little Harry Eugene, later a master mariner. Leroy remarried and fathered two daughters. In contrast, the husbands lived an average of 64½ years; Oscar Eaton, Adelaide's spouse, reached ninety-three.

Thus, though figures for the general Maine population of the period do not exist, we can say that those who survived the perils of childhood and the sea lived into the twentieth century and outlasted the beautiful craft and the sailing trades in which they accompanied their spouses, bore, nurtured, and taught their children. Save as recalled by their descendants, these courageous women have heretofore gone unrecognized. The lonely years without adult female companionship, the discomforts and perils of the deep which they braved, the little bodies consigned to the deep, or to some such wild grave-site as the Falklands, the stout husbands and sons they bade farewell to, knowing that perhaps that parting glance might be the last. What wells of fortitude, what springs of loyalty and love were sounded by the thirty-six and their stay-at-home sisters of 1880? Or did they, perhaps, accept the trials we have uncovered as the normal road of life?

14. Black, pp. 216-17, supplies this anecdote, but corroboration is difficult to find. Charles Waterhouse did die in Melbourne, [Belfast] *Progressive Age*, 31 May and 7 June 1883. The vessel's master is listed as 'Waterhouse' for the next six months in the notices appearing in the *New York Maritime Register*.

15. For example, 'When Mary Met the "Cape Horn Greybeards,"' by Wanda Webb, pr. in *Yankees Under Sail*, ed. by R. D. Heckman and R. Sagendorph (Dublin, N.H.: Yankee, Inc., 1968).

John F. Battick, Ph.D., is Associate Professor of History at the University of Maine at Orono. As the son of a career sailor in the U.S. Navy, he traveled to the Orient, the Pacific islands and the Caribbean as a child, growing up in contact with ships, the sea and foreign places. During the Korean War, he served on board a submarine in the Atlantic. In earning the doctorate at Boston University, he wrote his dissertation on the relationship between Oliver Cromwell's use of the navy and the foreign policy of the regime. Since 1975 he has been engaged in research and teaching maritime history, specializing in the social and economic history of seafaring communities. His articles and book reviews have appeared in Albion, Bulletin of the Institute of Historical Research (*London*), The Jamaica Journal, The Historian, *and the* American Review of Canadian Studies. *Married, he lives in Old Town, Maine.*

Scurvy and Anson's Voyage Round the World: 1740-1744

An Analysis of the Royal Navy's Worst Outbreak

By Eleanora C. Gordon, M.D.*

On 18 September 1740, Commodore George Anson led a squadron of Royal Navy ships out of St. Helen's on the Isle of Wight. His mission, as given by the Admiralty, was to 'Annoy and distress' the Spaniards on the South American coasts by 'taking, sinking, burning or otherwise destroying all their ships,' to seize any Spanish settlements which might be vulnerable, to encourage the Indians and Peruvian colonists to revolt, and to intercept and capture the great Spanish treasure galleon on its annual run between Manila and Acapulco.[1] Anson left with eight ships and a total complement of 1,955 men. He returned three years and nine months later with one ship and 145 members of the original crew. Scurvy had killed nearly 1,300 of his men.

Scurvy had become a recognized clinical entity by the end of the sixteenth century when increased navigational experience and enthusiasm for exploration, plunder, and commerce led to long sea voyages. It was both expected and feared on any journey or expedition lasting several months. As Richard Hawkins put it, it was 'the plague of the sea and the Spoyle of Mariners.'[2] However a high mortality rate from scurvy was not inevitable. Modestly equipped expeditions such as the circumnavigations of Sir Francis Drake, Thomas Cavendish, and Woodes Rogers were not marred by excessive mortality from scurvy, although outbreaks occurred. Yet Anson's venture, backed and supplied by all the resources of the British government, turned out to be the worst seaborne medical disaster ever.

What went wrong? Was the high mortality rate a result of the implacable ravages of a killer disease? Of faulty navigation? Of bureaucratic bungling? Or was it just plain bad luck? One contemporary reporter even wondered whether divine 'Providence threw insurmountable Obstacles in the Way.'[3] This presentation will show that the tragic outcome of this disastrous voyage was a result of all these factors—except possibly the last.

The time of onset and the severity of an outbreak of scurvy are influenced by many factors. There are medical factors which affect the susceptibility of the ascorbic acid-deficient crew: concomitant illnesses, both chronic and acute, physical and emotional stress, and hard physical labor.[4] Another set of variables are those related to the actual sailing of the ship. Any circumstance which kept the ship away from fresh food would affect the duration and the mortality rate of an outbreak. These nautical factors include wind and weather, ship construction, and navigational problems.

The records of Anson's journey are profuse and explicit, and the two sets of variables—medical and nautical—are easily traced.

Although Anson's voyage took place in the eighteenth century, the accounts of the journey follow the tradition of the great narratives of the Age of Discovery. There are frustrations, privateering, storms, a mutiny, possible desertions, a sea battle, survival against great odds, a triumphant return—and scurvy. The symptoms of scurvy recorded on Anson's voyage are the same as those described on expeditions made 500 years earlier and in

* The author is indebted to Barbara M. Kreutz of Bryn Mawr College, Dean of the Graduate School and historian, for her help, advice, and encouragement.

1. Great Britain, State Papers, Public Record Office, 42/88, ff. 2-10, 'Instructions to Commodore Anson, 1740,' in *Documents Relating to Anson's Voyage Round the World: 1740-1744,* ed. Glyndwr Williams (London: Navy Records Society, 1967), pp. 34-39.

2. Richard Hawkins, *The Observations of Sir Richard Hawkins, Knight, In His Voyage into the South Sea: Anno Domini, 1593* (London: John Jaggard, 1622), p. 37.

3. [John Young], *An Affecting Narrative of the Unfortunate Voyage and Catastrophe of His Majesty's Ship 'Wager'* (London: John Norwood, 1751), p. 3.

4. Elaine P. Ralli and Sol Sherry, 'Adult Scurvy and the Metabolism of Vitamin C,' *Medicine* 20 (September 1941): 260; John H. Crandon, Charles C. Lund, and David B. Dill, 'Experimental Human Scurvy,' *New England Journal of Medicine* 223 (September 5, 1940): 363; Bernard S. Gould, 'Ascorbic Acid and its Role in Wound Healing and Collagen Formation,' in *The Science of Nutrition and its Application in Clinical Dentistry* (Philadelphia: W. B. Saunders Co., 1966), p. 181; A. P. Meiklejohn, R. Passmore, and C. P. Stewart, 'The Importance of Ascorbic Acid to Man,' in *Lind's Treatise on Scurvy* (Edinburgh: University Press, 1953), pp. 437-38; Robert E. Hodges, James Hood, John E. Canham, Howerde E. Sauberlich, and Eugene M. Baker, 'Clinical Manifestations of Ascorbic Acid Deficiency in Man,' in *American Journal of Clinical Nutrition* 24 (April 1971): 441.

experiments performed 230 years later. Scurvy is a disease of remarkable consistency, and the symptoms described by seafaring laymen are medically correct.

Table I shows the distribution of these symptoms in the historical accounts. The first eyewitness account of unequivocal scurvy is found in Bishop de Vitry's history of the Fifth Crusade. Jean de Joinville's memoirs of the Seventh Crusade give similar symptoms. Both outbreaks occurred during a siege outside Damietta in Egypt when the enemy cut off the supply of fresh foods. Vasco da Gama's double outbreak in 1498 is the first recorded episode of sea scurvy. Jacques Cartier's explorers were struck by scurvy in 1535 when a terrible Canadian winter locked his ship in two fathoms of ice in the St. Lawrence. In these four accounts the diagnosis of scurvy is made in retrospect. The chroniclers did not know what it was. By the end of the sixteenth century, however, scurvy was so common that Richard Hawkins identified it as a specific disease and discussed the clinical signs in some detail in his account of his journey into the South Sea in 1593.

Swollen bleeding gums, fetid breath, and loose teeth appear in all accounts. The gum lesions of scurvy are known to be much more severe in individuals who have preexisting gingivitis, caries, and periodontal disease.[5] One can assume that seamen in the sixteenth century—and beyond—were not likely to have good oral hygiene and were, therefore, at risk for the gum lesions unless they happened to have lost their teeth. In that case they would not get swollen gums, but they would have equal difficulty in chewing the salt beef and hard tack.

Skin discolorations are often cited. Cartier noticed that the lesions ascended from the lower extremities,[6] a

Table I

SYMPTOMS OF SCURVY DESCRIBED IN HISTORICAL ACCOUNTS

	Fifth Crusade 1215 (de Vitry)	*Seventh Crusade 1250 (de Joinville)*	*Vasco da Gama 1498*	*Jacques Cartier 1535-1536*	*Richard Hawkins 1593*	*George Anson 1741-1742*
Gum lesions	+	+	+	+	+	+
Skin discoloration	+	+	−	+	−	+
Lassitude	−	−	−	+	+	+
Pain in legs and joints	+	−	−	−	+	+
Weight loss	+	−	−	+	−	−
Nosebleed	−	+	−	−	−	−
Swelling of legs	−	−	+	+	+	−
Shortness of breath	−	−	−	−	−	+
Skin ulcers	−	−	−	−	−	+
Personality changes	−	−	−	−	−	+
Convulsions	−	−	−	−	−	+
Sudden death	−	−	−	−	−	+

References

Jacques Cartier, 'Brief Récit et Succincte Narration de la Navigation faicte es ysles de Canada,' trans. in *Early English and French Voyages Chiefly from Hakluyt: 1534-1608*, ed. Henry S. Burrage (New York: Charles Scribner's Sons, 1932), p. 73.

A Journal of the First Voyage of Vasco da Gama: 1497-1499, ed. and trans. Ernest George Ravenstein (London: Hakluyt Society, 1898), p. 20.

Richard Hawkins, *The Observations of Sir Richard Hawkins Knight, In His Voyage into the South Sea: Anno Domini, 1593* (London: John Jaggard, 1622), p. 35.

Jean de Joinville, 'The Life of St. Louis,' in *Chronicles of the Crusades*, trans. M. R. B. Shaw (New York: Penguin Books, 1963), p. 237.

Jacques de Vitry, 'Histoire des Croisades,' in *Collection des mémoires relatifs à l'histoire de France*, ed. Francois Pierre Guillaume Guizot, vol. 22 (Paris: Brière, 1825), 351-52.

Richard Walter and [Benjamin Robins], *A Voyage Round the World by George Anson*, ed. Glyndwr Williams (London: Oxford University Press, 1974), pp. 105-07.

Glyndwr Williams, ed., *Documents Relating to Anson's Voyage Round the World* (London: Navy Records Society, 1967), pp. 86, 152, 166.

5. Gould, p. 180.

6. Jacques Cartier, 'Brief Récit et Succincte Narration de la Navigation faicte es ysles de Canada,' trans. in *Early English and French*

fact reiterated over 300 years later by Sir William Osler.[7] Lassitude, fatigue, or 'loathesome sloathfulnesse' as described by Hawkins,[8] is the earliest sign of the disease in both classical and experimental forms. Hawkins noted pitting edema.[9] Jean de Joinville remarked on the seriousness of nosebleed as a prognostic sign.[10] This observation made over 700 years ago was echoed by Osler[11] and is found in textbooks of the early twentieth century.[12] The symptoms which are taken from the accounts of Anson's journey represent much more sophisticated and detailed observations.

The phenomenon of sudden death in advanced scurvy was noted with sadness and resignation by one of the Anson chroniclers: 'if the afflicted person lay quiet in his hammock, he seemed to be perfectly well and hearty; but if he was removed out of it, on any necessity, he immediately fainted away; and this was always a sure sign of the party's dissolution.'[13]

Mental changes were a significant component of the clinical picture of scurvy. In addition to 'lassitude' and 'lost spirits,' the narratives of Anson's journey refer to 'idiotism,' 'lunacy,'[14] and 'a strange dejection of the spirits, . . . with shiverings, tremblings, and a disposition to be seized with the most dreadful terrors on the slightest accident.'[15]

Table II compares the symptoms noted on Anson's voyage with those observed by two physicians, James Lind and Sir William Osler, who had extensive experience with the disease. Lind, the naval surgeon, was familiar with scurvy as it developed on board ship, whereas Osler saw it at the bedside. Lind mentions sudden death in advanced scurvy,[16] but Osler does not, probably because his patients were already in hospital beds. Modern researchers note that sudden death may indeed occur in severe scurvy after clinical deterioration, often rapid, has begun.[17]

Table II

SYMPTOMS OF SCURVY DESCRIBED BY ANSON, LIND, AND OSLER

	Anson 1740	*Lind 1753*	*Osler 1892*
Gum lesions	+	+	+
Leg/joint pain	+	+	−
Weight loss	−	−	+
Skin discoloration	+	+	+
Edema	−	+	−
Nosebleed	−	+	+
Lassitude	+	+	+
Pallor	−	+	+
Skin ulcers	+	+	+
Shortness of breath	+	+	−
Sudden death	+	+	−
Convulsions	+	−	+
Mental changes	+	−	+

References

James Lind, *Lind's Treatise on Scurvy*, ed. C. P. Stewart and Douglas Guthrie (Edinburgh: University Press, 1953), pp. 113-25.

William Osler, *The Principles and Practice of Medicine* (New York: D. Appleton, 1892), pp. 313-15.

Richard Walter and [Benjamin Robins], *A Voyage Round the World by George Anson*, ed., Glyndwr Williams (London: Oxford University Press, 1974), pp. 105-07.

Glyndwr Williams, ed., *Documents Relating to Anson's Voyage Round the World* (London: Navy Records Society, 1967), pp. 86, 152, 166.

The mental changes mentioned in the historical accounts are echoed in Osler's clinical observation of mental depression, indifference, and delirium.[18]

Recent experimental studies on healthy volunteers corroborate historical and clinical findings, although experimental scurvy, with its rigid controls, cannot be considered identical to the classical form. Table III lists the symptoms which developed during the course of a study done by Hodges and others in 1971.[19] The symptoms of experimental scurvy match those of the chronicles, although the earliest physical sign, hyperkeratosis, or rough

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Voyages Chiefly from Hakluyt: 1534-1608, ed. Henry S. Burrage (New York: Charles Scribner's Sons, 1932), p. 73.

7. William Osler, *The Principles and Practice of Medicine* (New York: D. Appleton, 1892), p. 314.

8. Hawkins, p. 35.

9. Ibid., p. 36.

10. Jean de Joinville, 'The Life of St. Louis,' in *Chronicles of the Crusades*, trans. M. R. B. Shaw (New York: Penguin Books, 1963), p. 237.

11. Osler, p. 314.

12. M. Litten, 'Scurvy,' in *Nothnagels' Encyclopedia of Practical Medicine: Diseases of the Kidneys and of the Spleen: Hemorrhagic Diseases* (Philadelphia: W. B. Saunders & Co., 1905), p. 706.

13. Pascoe, Thomas, 'A True and Impartial Journal of a Voyage to the South Seas and Round the Globe in His Majesty's Ship *Centurion*, abstract in *Documents Relating to Anson's Voyage*, p. 86.

14. Guernsey, Philip Saumarez MSS, in *Documents Relating to Anson's Voyage*, p. 166.

15. Richard Walter and [Benjamin Robins], *A Voyage Round the World by George Anson*, ed. Glyndwr Williams (London: Oxford University Press, 1974), pp. 105-06.

16. James Lind, *Lind's Treatise on Scurvy*, ed. C. P. Stewart and Douglas Guthrie (Edinburgh: University Press, 1953), p. 35.

17. Harold H. Sandstead, 'Clinical Manifestations of Certain Classical Deficiency Diseases,' in *Modern Nutrition in Health and Disease*, 6th ed. (Philadelphia: Lea and Febinger, 1980), p. 692.

18. Osler, p. 315.

19. Hodges, et al., pp. 432-43.

Table III

SYMPTOMS OF EXPERIMENTAL SCURVY
FIVE SUBJECTS

Fatigue/listlessness	5/5	Arthralgia (pain in the joints)	4/5
Personality changes	5/5	Joint effusions (fluid in the joints)	3/5
Hyperkeratosis (rough skin)	5/5	Mild edema	2/5
Petechiae (minute skin hemorrhages)	4/5	Marked edema	1/5
Ecchymoses (bruises)	4/5		
Gum lesions	4/5		

Reference

Robert E. Hodges, James Hood, John E. Canham, Howerde E. Sauberlich, and Eugene M. Baker, 'Clinical Manifestations of Ascorbic Acid Deficiency in Man,' *American Journal of Clinical Nutrition* 24 (April 1971): 432-43.

skin, would be missed by participants of voyages where seamen had only one suit of clothing and rarely washed.

Personality changes are present in all cases. Detailed psychological studies performed during the experiment indicated that ascorbic acid deprivation produced early signs of depression, hypochondriasis, and hysteria.[20] Although the desperate circumstances and the hardships endured on long sea voyages into parts unknown would obviously be expected to produce signs of mental stress, this experimental evidence suggests that scurvy does indeed have a direct effect on the crews' emotional health.

In the sixteenth century scurvy was expected to appear in less than four months,[21] but the interval varied widely —from six weeks to six months. Minor replenishments along the way could delay the onset. The men who were already sick were the ones who were struck first. Hodges and his group's experiment produced signs of scurvy from forty-two days on. The severe manifestations, pain and fluid in the joints, were late developments.[22]

Anson's voyage attracted an enormous amount of interest when he returned to a hero's welcome in 1744. Books about the voyage appeared almost immediately. The official account is the one written by Richard Walter, the chaplain aboard Anson's flagship, *Centurion.* It first appeared in 1748 and went to five editions within a year. Recent scholarship indicates that Reverend Walter had some help in putting the book together.[23] This official account, written under Anson's supervision, is the best known. Fifteen editions had been printed by 1776. Other shorter recollections and narratives, many of them self-serving, also appeared and help fill out the story.

Commodore George Anson seemed an ideal choice for Commander-in-Chief of a force entrusted with such ambitious goals. He came from a prominent and well-connected family in Staffordshire, had gone to sea at fifteen, and had demonstrated his leadership while patrolling the South Carolina coast for pirates and while harassing French ships off West Africa. He was forty-three when he was selected for the expedition to the South Sea. Throughout the narratives, he comes across as a capable, indomitable, humane commander who faced incredible hardships in a manner befitting an officer in the Royal Navy.

Anson's fleet consisted of six naval ships: the flagship *Centurion,* a fourth rate with sixty guns; *Gloucester* and *Severn,* also fourth rates with fifty guns each; *Pearl,* fifth rate with forty guns; *Wager,* a sixth-rate store-ship which carried artillery and ammunition for assaults on land; and the little sloop *Tryal* with eight guns. In addition, two merchant ships, or victuallers, *Anna* and *Industry,* which were under contract to the Navy, were to accompany the squadron, transfer their cargo as space became available, and return to England. The ships' complement of 1,955 men included officers, their servants, warrant officers, midshipmen, seamen, ship's boys, marines, and supernumeraries, including the chaplain and a teacher of mathematics.[24]

Immediately we can recognize a medical factor—stress from overcrowding. *Centurion,* a two-decker of 1,005 tons, the largest of the ships, accommodated a company of 521. The official amount of hammock space per man was fourteen inches. The little 200-ton sloop *Tryal* carried 96 men. Osler points out the relationship between what he called 'physical and moral' stress and scurvy. Among these stresses he included overcrowding, dwelling in cold damp quarters and prolonged fatigue under depressing influences.[25] All of these conditions existed on an eighteenth-century British man-of-war.

Another medical factor which contributed to the se-

20. Robert A. Kinsman and James Hood, 'Some Behavioral Effects of Ascorbic Acid Deficiency,' *American Journal of Clinical Nutrition* 24 (April 1971): 455-64.

21. [George Whetstone], *The Cures of the Diseases in Forraine Attempts of the English Nation 1598,* ed. Charles Singer, facsimile reproduction (Oxford: Clarendon Press, 1915), p. 21.

22. Hodges, et al., p. 435.

23. Williams, ed., *Voyage Round the World,* pp. xxi-xxv.

24. Boyle Somerville, *Commodore Anson's Voyage into the South Seas and Around the World* (London: William Heinemann Ltd., 1934), p. xvi.

25. Osler, p. 313.

verity of the outbreaks of scurvy on this voyage was the basic poor health of many of the company. The fitting out of Anson's squadron was in progress at the same time as preparations were being made for an attack in the Caribbean, and Commodore Anson's request for fit ships, well-trained seamen, and adequate marines had a low priority on the Admiralty's list. Instead of the 300 additional sailors requested, Anson was allotted 170, of which 32 came straight from the convalescent ward in the hospital. The land forces assigned were 500 invalid soldiers, out-pensioners at Chelsea Hospital who were considered too sick for long marches. Only 259 reported for duty, most of them over sixty. These were the ones who were too crippled to desert when given their orders.[26] Such a group, already chronically ill and disabled, was especially susceptible to the illnesses common at sea—tropical fevers, the bloody flux and, of course, scurvy.

The rations ordered for a long sea voyage reflected current nutritional concepts, the need for durability, and seamen's eating habits. Table IV shows typical rations

Table IV

British Seaman's Rations
Admiralty Victualling Office Mid-Eighteenth Century

Biscuit 1 lb./day	Pease ½ pint 2 days/wk.
Beer 1 gallon/day	Butter 2 oz. 4 days/wk.
Beef 2 lb. 2 days/wk.	Cheese 4 oz. 3 days/wk.
Pork 1 lb. 2 days/wk.	Oatmeal 1 pint 3 days/wk.

Reference

Christopher Lloyd and Jack L. S. Coulter, *Medicine and the Navy*, vol. 3 (Edinburgh: E. S. Livingstone, 1961), 81.

for a British seaman in the mid-eighteenth century. Details in the accounts of Anson's voyage indicate that his supplies were similar except that wine and brandy—in extremely large quantities—were issued instead of beer which would turn sour in the tropics.

Tables V, VI, and VII give a nutritional analysis of an eighteenth-century British seaman's ration. These tables should not be interpreted too literally. Assays based on American foods of 1975 may or may not be accurate for naval victuals of 1740, but the figures do serve as a rough guide. Table VIII gives the daily requirement of an adult male by 1974 standards. The official diet endorsed by the Admiralty contained adequate calories and protein, and riboflavin, thiamine, and niacin (the B vitamins). The diet was deficient, but not entirely lacking, in vitamin A. A deficiency of vitamin A causes night-blindness. Although ships were wrecked at night, there was usually a good reason, and there is no firm evidence that vitamin A deficiency was a factor.

Ascorbic acid (vitamin C) was minimally present in the seamen's rations, although officers often brought along foods which happened to be antiscorbutic, such as onions and marmalade. The standard rations were supposed to be supplemented by fresh foods on the journey, but these were not always available. Fresh fish might or might not have ascorbic acid. Codfish and halibut have very little, whereas one pound of baked flounder or broiled haddock provides nine milligrams.

There often was a discrepancy between the amount of food authorized and that actually issued. However Anson's ships seem to have been well provisioned. Some deterioration of provisions on a long voyage was inevitable. In addition to spoilage from leaky hulls there was rat and vermin infestation. Still the men did their best. The crew of the sloop *Tryal* toasted their bread over burning brandy to kill off the maggots,[27] a rather creative solution to a vexing problem. On journeys such as Anson's a shortage of water was always a threat because frequent landings for replenishment were not always possible.

Anson hoped to set sail in June to allow plenty of time to round Cape Horn in the months of December and January, the time of year considered most favorable. The delays caused by the dilatory preparations of the Admiralty, by unfavorable winds in the channel, and by unwelcome orders to escort a convoy postponed the departure until September. These delays were a crucial nautical factor which contributed to the unhappy outcome of the voyage. Anson reached Cape Horn in the worst possible time of year, that of the vernal equinox, and the passage was prolonged and terrible.

The squadron finally left on 18 September and set a course for the island of Madeira. The winds were so contrary that the passage took forty days instead of the expected seven to ten. Another costly delay. In Madeira the ships took on wine, appropriately, and 'other refreshments' of an unspecified nature. It is quite likely that they included fruit. After a week in Madeira, the squadron headed for the island of St. Catherine off the coast of Brazil, catching dolphins along the way. During this leg of the journey one of the victuallers, *Industry*, trans-

26. Walter and [Robins], p. 23.

27. Greenwich, National Maritime Museum MS. 9354/JOD36, Journal of Lawrence Millechamp, abstract in *Documents Relating to Anson's Voyage*, p. 78.

ferred her cargo of brandy and headed home to England. She was captured by a Spanish ship.

The first indication of illness is noted on 20 November, three weeks out of Madeira, when the captains described their crews as 'sickly.' This was not scurvy, but some sort of tropical fever which caused weakness and diarrhea. The infection and malabsorption led to an increased demand on the sick men's body stores of ascorbic acid. One hundred and seventy-one deaths from fever were recorded, mainly among the old pensioners, and those who survived the fever were the first to succumb to scurvy.[28]

Details from the narratives lead us to believe that the environment for Anson's sick was probably quite similar.

Once St. Catherine's was reached on 18 December, the surviving sick were taken ashore, and the healthy part of the crew repaired and cleaned the ships. The island provided fresh beef but very little else. In fact the unexpected scarcity of provisions on the Brazilian and the Patagonian coasts led Anson to recommend that the Admiralty explore the possibility of developing the Falklands as a supply base for British ships.[30]

Recovery of the sick was slow, and men were still convalescent and weak when the ships sailed south one month later. The squadron spent a week at Port St. Julian to repair *Tryal*'s masts which were to provide trouble throughout the journey. They were too tall for the ship. Port St. Julian, the desolate spot where Magellan's and Drake's mutineers were executed, provided neither wood, water, nor provisions.

The ships then sailed toward Cape Horn by way of the Strait of LeMaire, the standard route in the eighteenth century. Although the weather was fair when the squadron passed through the strait, gale winds, snow, and sleet began soon afterwards and lasted nearly three months, scattering the squadron. The delays in starting from England had brought them to Cape Horn when the westerly winds were at their worst.

Table V

British Seaman's Daily Ration

Pork Day (Two Days a Week)

Food	*Calories*	*Protein Grams*	*Fat Grams*	*Carbohydrate Grams*	*Vit. A I.U.*	*Thiamine mgm.*	*Riboflavin mgm.*	*Niacin mgm.*	*Ascorbic Acid mgm.*
1 lb. biscuit (2 cups wheat flour)	800	32	4.8	170.4	0	1.32	0.28	10.4	0
1 gallon beer (3.6% alcohol)	1664	12.8	0	140.8	—	0.16	1.28	25.6	—
1 lb. pork (fresh ham)	1696	104.3	138.8	0	0	2.31	1.04	20.9	—
½ pint pease	386	27.3	1.5	68.4	135	0.84	0.33	3.4	—
2 oz. butter	406	0.4	46	0.2	187.5	—	—	—	0
Total	4952	176.8	191.1	379.8	322.5	4.63	2.93	60.3	—

A (—) in the table indicates that no reliable value could be found although there is reason to believe a measurable amount may be present.

References

Christopher Lloyd and Jack L. S. Coulter, *Medicine and the Navy*, vol. 3 (Edinburgh: E. S. Livingstone, 1961), 81.

U.S. Department of Agriculture, *Nutritive Value of American Foods*, by Catherine F. Adams, Agriculture Handbook No. 456 (Washington, D.C.: Government Printing Office, 1975).

An idea of the miserable conditions for the sick aboard a British man-of-war is found in Tobias Smollett's semi-autobiographical account of life as a surgeon's mate in 1741 in his novel *Roderick Random:*

> I saw about fifty miserable distempered wretches, suspended in rows, so huddled one upon another, that not more than fourteen inches space was allotted for each with his bed and bedding; and deprived of the light of day, as well as of fresh air; breathing nothing but a noisome atmosphere of the morbid steams exhaling from their own excrement and diseased bodies, devoured with vermin hatched in the filth that surrounded them, and destitute of every convenience necessary for people in that helpless condition.[29]

28. Somerville, p. 304.

29. Tobias Smollett, *Roderick Random* (London: Everyman, 1927), p. 153.

30. Walter and [Robins], p. 97.

Table VI

British Seaman's Daily Ration

Meatless or 'Banyan' Day (Three Days a Week)

Food	*Calories*	*Protein Grams*	*Fat Grams*	*Carbo-hydrate Grams*	*Vit. A I.U.*	*Thia-mine mgm.*	*Ribo-flavin mgm.*	*Niacin mgm.*	*Ascorbic Acid mgm.*
1 lb. biscuit (2 cups wheat flour)	800	32	4.8	170.4	0	1.32	0.28	10.4	0
1 gallon beer (3.6% alcohol)	1664	12.8	0	140.8	——	0.16	1.28	25.6	——
1 pint oatmeal	1778	65	33.6	311.2	0	2.74	0.63	4.56	0
2 oz. butter	406	0.4	46	0.2	187.5	——	——	——	0
4 oz. hard cheese	452	28.4	36.4	2.4	1480	0.04	0.52	trace	0
Total	5100	138.6	120.8	625	1667.5	4.26	2.71	40.56	——

A (——) in the table indicates that no reliable value could be found although there is reason to believe a measurable amount may be present.

References

Christopher Lloyd and Jack L. S. Coulter, *Medicine and the Navy*, vol. 3 (Edinburgh: E. S. Livingstone, 1961), 81.

U.S. Department of Agriculture, *Nutritive Value of American Foods*, by Catherine F. Adams, Agriculture Handbook No. 456 (Washington, D.C.: Government Printing Office, 1975).

Table VII

British Seaman's Daily Ration

Beef Day (Two Days a Week)

Food	*Calories*	*Protein Grams*	*Fat Grams*	*Carbo-hydrate Grams*	*Vit. A I.U.*	*Thia-mine mgm.*	*Ribo-flavin mgm.*	*Niacin mgm.*	*Ascorbic Acid mgm.*
1 lb. biscuit (2 cups wheat flour)	800	32	4.8	170.4	0	1.32	0.28	10.4	0
1 gallon beer (3.6% alcohol)	1664	12.8	0	140.8	——	0.16	1.28	25.6	——
2 lb. salt beef (yield from 2 lbs. raw corned beef)	2264	139.2	184.8	0	0	0.12	1.1	9.2	0
Total	4726	184	189.6	311.2	——	1.60	2.66	45.2	——

A (——) in the table indicates that no reliable value could be found although there is reason to believe a measurable amount may be present.

References

Christopher Lloyd and Jack L. S. Coulter, *Medicine and the Navy*, vol. 3 (Edinburgh: E. S. Livingstone, 1961), 81.

U.S. Department of Agriculture, *Nutritive Value of American Foods*, by Catherine F. Adams, Agriculture Handbook No. 456 (Washington, D.C.: Government Printing Office, 1975).

The first cases of scurvy were seen on 7 March, the day the strait was passed and 125 days after leaving Madeira. The toll mounted rapidly for the next three months. In addition to scurvy, the crews, already weakened by the effects of the tropical fever, faced exhaustion, frostbite, and the terrifying storms. Captain Murray of *Pearl* wrote of his men's despair. They were:

> . . . now quite jaded and fatigued with continual labor and watching, and pinched with the cold and want of water . . . they became so dejected as to lay themselves down in despair, bewailing their misfortunes, wishing for death as the only relief to their miseries, and could not be induced by threats to go aloft.[31]

As the number of seamen ill with scurvy increased, fewer and fewer skilled hands remained fit to work the ships. The purser on the sloop wrote, 'Sometimes we had no more than the captain, lieutenant, surgeon, myself, and two boys with now and then one marine to work the sloop, mend the sails, bury the dead and do the more servile offices.'[32]

Dysentery as well as scurvy now appeared on some of the ships, especially *Gloucester,* and the supplies of water dwindled, thereby increasing the mortality. During the storm *Wager* was wrecked. Her desperate and drunken crew mutinied and set out in the ship's long boat and cutter eastwards through the Straits of Magellan. Thirty of them made it back to England. *Severn* and *Pearl* turned back, and after great hardships and heavy mortality from scurvy, reached Rio de Janiero. The remaining ships, *Centurion, Gloucester, Tryal,* and *Anna* lost sight of each other in the storms.

Anson in *Centurion* had underestimated the strength of the westerly current around Cape Horn and had miscalculated his longitude. During a temporary clearing of the weather he found himself off Cape Noir near Terra del Fuego. He was 300 miles east of his reckoning, and his crew were farther than ever from fresh provisions. The deaths from scurvy continued.

After being tossed around for another month, *Centurion* sailed for the island of Juan Fernandez, the appointed rendezvous, a place well known to English privateers, and the site of Alexander Selkirk's lonely sojourn. Anson chose to sail along the meridian toward Juan Fernandez. His navigation was inaccurate, and he could not find the island. At one point a few hours' sail west would have brought *Centurion* within sight of the island. But he sailed east, eventually turned around and found it, ten days and eighty lives later.

Although *Centurion* came within sight of Juan Fernandez on 9 June, three days passed before her sickly crew, helped out by officers, servants, and boys, could get her properly moored. Men continued to die during that time and for twenty days after landing. Eventually 167 sick men were taken to the shore on hammocks carried by the few men and officers, among them Anson, fit enough to wade through the surf from the boats to the beach. At least a dozen men died in transit, evidence of the sudden death feared in classical scurvy.

Tryal, sailed by only two officers and three men, arrived 11 June. Some of her sick died while being carried ashore. Because of the shortage of manpower, *Tryal*'s anchor could not be properly secured. She blew out to sea for four days and lost more men. *Gloucester* was sighted 26 June. She had lost two-thirds of her company and the survivors were too weak to handle the ship. Even though *Gloucester* was close enough to the shore on several occasions to receive fresh provisions and water sent out in boats, she drifted about, sometimes out to sea, for four weeks. Seventy more men died in that interval.

Difficulty in making a good mooring was a constant problem for the clumsy square-rigged mid-eighteenth

31. Great Britain, Admiralty Records, Public Record Office, 1/2099, Section 3, Captain Murray to Josiah Burchett, 10 July 1741, in *Documents Relating to Anson's Voyage,* p. 102.

32. Millechamp, in *Documents Relating to Anson's Voyage,* p. 78.

Table VIII

DAILY REQUIREMENTS ADULT MALE

(19-35 YEARS OF AGE; 5′10″; 150 LBS.)

Calories kcal.	*Protein Grams*	*Fat Grams*	*Carbohydrate Grams*	*Vitamin A I.U.*	*Thiamine mgm.*	*Riboflavin mgm.*	*Niacin*	*Ascorbic Acid mgm.*
3000	75	150	338	3330	1.5	1.8	20	30

Reference

'Recommended Daily Nutrient Intakes—Canada. Revised 1974,' in Corinne H. Robinson, *Basic Nutrition and Diet Therapy,* 3rd ed. (New York: Macmillan, 1975), p. 334.

century ships. They did well with a fair following breeze but were awkward to maneuver in the manner necessary when the landing was uncharted and the winds were not favorable. A large component of skilled hands were needed to handle the ship under the best of circumstances. The toll from scurvy on Anson's voyage drastically reduced the size of the crew and the storm-damaged ships became even harder to manage. The deaths from scurvy continued as the provision of fresh food was delayed.

Meanwhile the merchant ship *Anna* had found a safe harbor with water, greens, and herbs on the coast. *Anna,* of 400 tons, carried a crew of only sixteen men, all of them presumably expert career merchant mariners. Although some cases of scurvy had occurred, there were no deaths from fever or scurvy. The little sloop *Tryal,* half *Anna*'s size, carried a company of ninety-six and lost fifty-seven.[33]

Only four of the invalids survived the journey around Cape Horn.

The survivors on Juan Fernandez recovered on ample supplies of turnips, greens, herbs, cabbages and fresh fish. They learned to eat seals and sea-lions which some claimed tasted just like English bullock. Anson, determined to carry out his orders, made preparations to proceed. *Anna* was scuttled and the other three ships took on the 444 surviving crewmen[34] to carry on some hit-and-run raids on the Chilean and Peruvian coasts. Several Spanish ships, carrying modest amounts of silver and dry goods, were captured. On this run the sloop finally lost her mast for good and was scuttled. By March of 1742, the squadron, now reduced to just *Centurion, Gloucester,* and a few thinly manned small prize ships, lurked outside Acapulco to intercept the Spanish treasure galleon. Unfortunately, news of Anson's arrival had preceded him and the galleon remained in port. Anson then decided to take *Centurion* and *Gloucester* across the Pacific to China in the hopes of capturing the galleon off the Philippines after obtaining repairs, replenishments, and some healthy seamen at Canton. Anson departed on 6 May and expected to arrive in China in two months. It took six months and 221 more lives.

The expected northeast trade wind did not materialize for seven weeks. The two ships' masts began to disintegrate so that the ships could not make much headway. Then scurvy reappeared. The second outbreak began shortly after leaving the coast of Mexico sometime during May 1742. Reverend Walter, the chaplain-chronicler, was baffled by the reappearance of the disease in a warm climate this time and in the presence of adequate water, a clean uncrowded ship, live hogs and fowls, green sea turtles, bonitos, dolphins, and albacore.[35] Apparently there had been no antiscorbutics for some time, and scurvy developed rapidly in men who had already had the disease. The crew had, as Walter put it, 'the melancholy prospect of either dying by the scurvy, or perishing with the ship for want of hands to navigate her.'[36] The damaged *Gloucester,* again undermanned by a disabled crew, was scuttled, and the lonely *Centurion,* driven off course by storms, not knowing the longitude, on 27 August stumbled on the island of Tinian in the Marianas, or Ladrones, the very islands where Magellan had landed his scurvy-ridden crew in 1521.

The sick were again carried on shore by Anson and the officers, and again the men continued to die on landing. Anson himself was suffering with a case of scurvy by this time. He was the last man affected and his symptoms were mild. Scurvy was a disease of the deckhand. Lind observed accurately, 'It is for a long time confined to the common seaman . . . it is but rare to see this disease in even a petty officer.'[37] The officers, their servants, and the ship's boys were affected last if at all. The officers were in better health, had better teeth and had better provisions. They were housed in cabins which were commodious and sanitary in comparison to the crowded decks. The servants were looked after by their officers, and the boys certainly knew where the marmalade was kept. In the Anson accounts there are many references to only officers, servants and boys being fit for duty.[38] Two hundred twenty-one more men died on the second outbreak.[39]

The island of Tinian provided such an abundance of fresh foods: coconuts, guavas, limes, oranges, breadfruit, and scurvy grass, that most of the men who survived the first two days recovered within a week.

These curative properties of fresh fruits and vegetables had been observed, if not promulgated, by seafarers for nearly two hundred years. Yet the medical establishment, hung up on abstract reasoning, refused to acknowledge this empirical remedy. A young lieutenant on *Tryal* wrote quite correctly:

33. Somerville, p. 304.

34. Ibid., p. 305.

35. Walter and [Robins], p. 266.

36. Ibid.

37. James Lind, *A Treatise of the Scurvy* (Edinburgh: Sands, Murray and Cochran, 1753), p. 45.

38. Millechamp, in *Documents Relating to Anson's Voyage,* p. 78; Somerville, p. 303.

39. Somerville, p. 304.

Nor can all the physicians with all their materia medica find a remedy for it equal to the smell of a turf of grass or a dish of greens The land is man's proper element and vegetable and fruit his only physic.[40]

Centurion left Tinian 21 October and anchored in the harbor of Macao near Canton 12 November. Anson proved adept at dealing with the Chinese bureaucracy, and he was able to replenish his crew and repair the ship. He sailed out to the coast of the Philippines and did indeed capture the Acapulco galleon with a small force made up of his surviving seamen, a few new recruits and thirty ship's boys. On 10 December 1743, Anson began an uneventful journey home by way of the Cape of Good Hope. *Centurion* came to anchor off Spithead 15 April 1744.

The ship carried home a treasure worth 480,000 pounds.

Commodore Anson, considered a national hero, was appointed to the Admiralty Board, where he immediately set to work to improve ship design, and eliminate shoddy dealings in marine supplies and victualling practices. In 1747 he was ordered to sea again and defeated the French off Cape Finisterre. He was made a peer and became First Lord of the Admiralty in 1751.

To return to our original question. What went wrong? The medical factors alone—ascorbic acid deficiency in a group of men already at risk because of chronic illness, tropical fever and dysentery, and tremendous physical and mental stress—would have produced scurvy on this voyage. In this journey, however, and perhaps in others, the nautical factors contributed significantly to the *mortality,* if not the morbidity. If the weather had been favorable, the ships sound, and the navigation accurate, Anson's ships might have spent two months in the passage around Cape Horn from St. Catherine's to Juan Fernandez. Scurvy would have been inevitable, and the infirm members of the company would have been severely affected, but fresh foods could have saved many of the others. However, the sailing limitations of the ships of the Royal Navy, the inferior state of the art of navigation of the early eighteenth century, and the foul weather kept the ships away from land and proper food. A ghastly toll was the result.

It is remarkable that the expedition accomplished anything at all. Although the results fell far short of the expectations, the British public and the government thought it was a triumph. But one seaman on *Wager* raised a disturbing question: 'if we compute the whole Cost of the Expedition, including the Ships, Cargoes, and Lives that were lost in the Course of it, it is a Question if the Treasure imported will countervail the Expence.'[41]

Yet there was a very significant though intangible benefit. Walter's account of Anson's voyage stimulated James Lind to summarize all the known literature on scurvy and describe his own definitive experiments which demonstrated the curative properties of oranges and lemons. *A Treatise of the Scurvy* published in 1753 did not get the attention it deserved at first, but eventually it was accepted and scurvy was eliminated from the Royal Navy by 1799. James Lind dedicated his book to 'George, Lord Anson, Who as a just reward for the great and signal services done to the British Nation does now preside over her Naval Affairs.'[42] It was a fitting tribute to a man who had done his best.

40. Saumarez, in *Documents Relating to Anson's Voyage,* p. 166.

41. [Young], p. 6.

42. Lind, *Lind's Treatise on Scurvy,* ed. Stewart and Guthries, p. 4.

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Dr. Eleanora Gordon is a graduate of Vassar College and Yale University School of Medicine. She began the study of medical aspects of history after her retirement from the practice, administration and teaching of developmental pediatrics. Her current research interests are in maritime history and exploration and in pediatrics and child development in the Middle Ages. The basic research for Scurvy and Anson's Voyage Round the World *was carried out while she was a special student in the graduate program of the History Department at Bryn Mawr College. The paper was presented to the Section on Medical History at the College of Physicians of Philadelphia on October* 19, 1983.

BLACKING

Merchant ship owners and navies have been concerned with extending vessel life through preservation since the days of Pliny. Throughout the centuries, various combinations of wood types, fastenings, and preservative compounds have been tried.

One area of a ship that was always a concern was the planking that made up the vessel's sides. The wales, which were located near the waterline, and the planks just above them (the black strakes) often received particular attention. These planks were alternately wetted by salt water and then exposed to the sun as the ship made its way through rolling seas. Any wood which was constantly exposed to such changes would eventually decay. Consequently, these and other areas which would suffer from the effects of sun, rain, and sea were often coated with 'blacking.' This blacking served as an attractive decorative element as well as a preservative.

The blacking compound itself was usually a mixture of tar, lampblack, and oil. The material could be daubed or painted on during an overhaul, but was sometimes applied while the vessel made its way during fair weather. Depending on where a vessel was in service, the blacking may have needed renewal every few months.

During the cruise of the USS brig *Spark* in 1824, the hull needed to be blacked. The following recipes for blacking are quoted from the journal of John L. Cummings, who was aboard *Spark* during her 1824 cruise. Cumming's journal is presently in the manuscript collection at the G. W. Blunt White Library at Mystic Seaport Museum.

Directions for making good blacking for Ship's Sides Above the wails.

1 lb. Lampblack, 11b. Read Lead, 1 Gall. Paint Oil, ½ lb Letharge [probably lead oxide], ½ oz. Indigo ground fine. Boil & stir them for ½ hour. When cool enough stir in a pint of Spirits Turpentine. Lay on your paint warm.

Composition for Blacking Bends [Wales]

To a bucket of Tar add a pound of Lamp Black well mixed in Oil to which put 1 lb. Gun powder. Keep the mixture covered with strong brine & that keep hot with loggerheads [A tool with an iron ball at one end. The ball would be heated in a fire and used for melting pitch or heating liquids.] taking care not to touch the Tarr while warming the water, let the Brushes be dipt through the water when laying on the mixture.

GLENN S. GORDINIER
Research Associate

Mystic Seaport Museum

Was the Continental Navy a Mistake?

By Jonathan R. Dull

On 7 October 1775 the Continental Congress debated a resolution suggested by the Rhode Island Assembly.[1] The Rhode Islanders wished the Congress to undertake the building of an American navy, an idea which brought the scorn of Samuel Chase, a delegate from Maryland known for his sarcasm.[2] According to John Adams' diary, Chase declared that building an American fleet would be the maddest idea in the world and would require Congress to mortgage the entire continent.[3] Chase's views prevailed in the day's debate, but his victory was short-lived. Within a month Congress changed its mind, inspired perhaps by George Washington's fitting out of warships to capture supplies for his army in Massachusetts. It voted to pay for converting four merchantmen into warships and then a month later it approved the construction of thirteen frigates.[4] It took only another year for Congress to approve a supplemental construction program which included three ships of the line, the massive battleships of the age of sail.[5]

The shipbuilding program proved a mixed success. Before the frigates could all be completed the British were in control of the Hudson and Delaware Rivers. Half the new warships were trapped and never got to sea. The supplemental building program of December 1776 was even less successful. Only one of the ships of the line and three additional frigates were ever launched, and of these only two frigates were ever put into American service.[6] Nevertheless, in spite of losses, delays, cancellations, and cost overruns, a Continental navy was established. By July 1779 four small squadrons were in operation. During that month one of these squadrons, comprising two frigates and a sloop of war, captured eleven prizes, worth more than $1,000,000 in prize money, from a convoy encountered off Newfoundland.[7] Another squadron of two frigates had just returned to Philadelphia from a cruise off the Delaware Capes, where it had taken a large British privateer and other prizes.[8] Also that month three Continental warships sailed for Penobscot Bay as part of the escort for a Massachusetts expedition against a newly established British outpost.[9] Finally, in the French port of Lorient a squadron under the command of John Paul Jones was awaiting fair winds to sail for British waters.[10]

This period of intense naval activity, however, proved all too brief. The squadron off Newfoundland was sent on its next cruise to Charleston, South Carolina, where it was lost when the city was captured the following May.[11] The Penobscot expedition was broken up by the British and all the American ships captured or destroyed. Jones' squadron was dissolved after one cruise. By the middle of 1780 the Continental navy was reduced to half a dozen warships and all but two of these were gone by the end of hostilities in 1783.[12]

Could Samuel Chase have been right? The Continental navy was, under a different name, the first appearance of the United States Navy and it may not seem polite to question the origins of that by-now venerable institution. Nonetheless, Chase's objections should not be dismissed merely on patriotic grounds. What did the Continental navy actually accomplish and was it worth the time, money and energy Congress invested in it?

It is first worth remembering that the Continental navy represented only one part of the American naval effort during the Revolution. Eleven of the thirteen states had their own navies (Delaware and New Jersey being the

1. Worthington Chauncey Ford, ed., *Journals of the Continental Congress, 1774-1789*, 34 vols. (Washington: Library of Congress, 1904-1937), 3:281.

2. William M. Fowler, Jr., *Rebels under Sail: The American Navy during the Revolution* (New York: Charles Scribner's Sons, 1976), 52-54.

3. Lyman H. Butterfield, ed., *Diary and Autobiography of John Adams*, 4 vols. (Cambridge, Mass.: Belknap Press of Harvard University Press, 1961), 2:198.

4. Fowler, *Rebels under Sail*, 55-58, 63-65.

5. Ibid., 70-71.

6. The frigates *Alliance* and *Confederacy* were put in service; the ship of the line *America* and frigate *Bourbon* launched but not put in American service: Gardner W. Allen, *A Naval History of the American Revolution*, 2 vols. (Boston and New York: Houghton Mifflin Co., 1913), 2:368, 611, 615, 701-02.

7. Fowler, *Rebels under Sail*, 101-02.

8. Allen, *Naval History of the American Revolution*, 2:381-82.

9. Fowler, *Rebels under Sail*, 105-07.

10. Samuel Eliot Morison, *John Paul Jones: A Sailor's Biography* (Boston and Toronto: Little, Brown and Co., 1959), 194-97.

11. Allen, *Naval History of the American Revolution*, 2:491-97.

12. Ibid., 2:700-02.

exceptions).[13] The Continental army had its own naval arm which, as we have seen, predated the Continental navy. This earlier naval service was not fully superseded by the Continental navy; army officers continued to command ships not only on Lake Champlain but also in Long Island Sound and off Massachusetts.[14] Dwarfing all other naval activities, however, were the efforts of American privateers. Businessmen all along the American coast fitted out warships (at least two thousand ships in all)[15] to capture British merchantmen, just as the British in turn fitted out privateers in occupied New York and Bermuda to prey on American merchantmen. Most American sailors preferred, sensibly enough, the more remunerative service on privateers to the hard discipline and poor prize money of Continental navy ships. Consequently the difficulty of finding crews kept the Continental ships in port much of the time. At sea though, the differences between the different branches of naval service tended to become blurred; Continental, state, and even private warships cruised together, participated in joint operations like the Penobscot expedition, and even shared such tasks as escorting convoys. Nevertheless, the Continental navy with its larger ships and closer supervision by Congress did have its specialties. To appraise what the Continental navy accomplished we should begin by looking at its mission.

To study the navy's mission, however, is not so easy as it might appear. Congress never did fully make up its mind about what the navy was supposed to do. The British navy was quickly seen to be too powerful to challenge directly. Even the initial hope that British forces could be pinned down by American raiding proved unrealistic. The Continental navy therefore undertook a variety of missions.

First, in chronological as well as theoretical importance, was its support of operations against the British army and British bases. The first Continental navy operation involved the use of all the warships of the new navy. In early 1776 they sailed to the Bahamas, where they covered the landing of two hundred and fifty marines and sailors who captured Fort Nassau. This mission in fact had not been planned by Congress, which instead had expected the fleet to clear American coastal waters of the British blockade. The fleet's commander, though, chose the safer task of attacking the virtually defenseless Bahamas. The glory of his triumph was a bit dimmed when a single American sloop of war and a landing party of twenty-five men duplicated the feat in 1778.[16] However unimpressive, at least the first capture of Fort Nassau was a success. Other attempts at attacking British bases or towns were ineffective at best, disastrous at worst. The navy's participation in the attack at Penobscot and the defense of Charleston led to the destruction of both the American naval forces. John Paul Jones' raids on Canso, Nova Scotia and Whitehaven, England did little damage, and his attempts to capture British towns for ransom miscarried.[17] The British army suffered less harm from Continental warships than it did from American rowboats, which ferried Washington's army from Brooklyn to New York and across the Delaware, and which permitted raiding across Long Island Sound against British foraging areas.[18] Unlike during the Civil War, the navy participated in little river warfare and its few attempts, like the defense of the Delaware in 1777, were generally unsuccessful.[19] Operations on Lake Champlain, which did prove important, were the work of the Continental army.

The Continental navy also had little success in breaking the British blockade of American ports. The British navy lost only one frigate captured in American waters by the Continental navy and it, as well as one of its American captors, was retaken a month later.[20] (A second frigate was taken off the English coast by John Paul Jones and eventually was sold to the French.)[21] The Continental navy had little more luck against smaller British warships, capturing fewer than a dozen, although it did take a number of British privateers;[22] essentially it inflicted no more than a few pinpricks against the British

13. Fowler, *Rebels under Sail*, 244.

14. Allen, *Naval History of the American Revolution*, 1:85-89; William James Morgan, *Captains to the Northward: The New England Captains in the Continental Navy* (Barre, Mass.: Barre Gazette, 1959), 179.

15. William James Morgan, "American Privateering in America's War for Independence, 1775-1783," *The American Neptune* 36 (1976), 84.

16. Morgan, *Captains to the Northward*, 33-45, 115-17.

17. Morison, *John Paul Jones*, 64, 141-42, 218-20.

18. R. Arthur Bowler, *Logistics and the Failure of the British Army in America, 1775-1783* (Princeton, N.J.: Princeton University Press, 1975), 74-75; Richard Buel, Jr., *Dear Liberty: Connecticut's Mobilization for the Revolutionary War* (Middletown, Conn.: Wesleyan University Press, 1980), 119.

19. John W. Jackson, *The Pennsylvania Navy, 1775-1781: The Defense of the Delaware* (New Brunswick, N.J.: Rutgers University Press, 1974), 120-281.

20. Allen, *Naval History of the American Revolution*, 1:202-13.

21. Morison, *John Paul Jones*, 221-42, 266-67.

22. William Laird Clowes, *The Royal Navy: A History from the Earliest Times to the Present*, 7 vols. (Boston: Little, Brown and Co.; London: Sampson Low, Marston and Co., 1897-1903), 4:109-12; Robert Wilden Neeser, ed., *Statistical and Chronological History of the United States Navy, 1775-1907*, 2 vols. (New York: The Macmillan Co., 1909), 2:24-33.

navy. It did not even prove very successful at scouting the movements of British squadrons, which, for example, arrived by surprise to break up American attacks at Newport in 1778 and Penobscot in 1779.[23]

Unsuccessful at breaking the British blockade, the navy attempted instead to provide escort for American merchantmen. Generally this escort was given only for the initial departure from port, but on occasion the navy escorted merchantmen for the entire passage to or from Europe or the West Indies. The Continental navy's record in convoying was at best mixed. Although some good service was performed, all too often Continental warships became separated from the ships they were escorting. A prime example is *Alliance*'s separation in 1781 from *Marquis de Lafayette,* captured subsequently with a cargo that had taken months for the American mission in France to collect.[24] Often, too, Continental ships provided little help when British warships appeared; they themselves were liable to be captured as were in 1781 the Continental frigates *Confederacy* and *Trumbull*.[25]

Continental navy warships could and did retaliate by capturing British merchant ships. With its large frigates and its ability to operate in squadron strength, the Continental navy should have posed a major threat to British shipping. It did force the British to the inconvenience and expense of arming or convoying its supply ships,[26] but it accomplished less than might have been expected. Washington's tiny warships of 1775 had had excellent success operating against unarmed British supply ships; the Continental navy faced a better prepared enemy. For it to capture even a small convoy or a major share of a larger one was very rare; *Bon Homme Richard* took *Serapis,* but *Serapis*' important Baltic convoy escaped.[27] Most captures by Continental warships were of individual British merchantmen. The navy captured about two hundred merchantmen in all, and for every one taken by the navy perhaps ten were taken by privateers.[28] Moreover, this form of warfare, however lucrative, was of dubious strategic value. Benjamin Franklin, who sponsored privateers in order to capture prisoners for exchange, became so disgusted with privateering that in 1783 he proposed it henceforth be banned from warfare on humanitarian grounds.[29] It is difficult to prove that the American war on British trade had any effect on the winning of the war; it did have, however, terrible costs in human terms, as thousands of captured American sailors, mostly from privateers, died of neglect aboard British prison ships.[30]

The most useful accomplishments of the Continental navy probably were the product of its most mundane activity, the ferrying of diplomats, dispatches, supplies, and specie to and from Europe and the West Indies. Continental warships or packets successfully brought William Bingham to Martinique, John Adams, Benjamin Franklin, and John Laurens to France, and John Jay partway to Spain.[31] Warships as well as merchantmen were used to bring uniforms, supplies, and specie to America, as did for example in 1778 the French-built frigates *Deane* and *Queen of France*.[32] Also the Continental navy helped maintain an at least intermittent communication between America and the outside world.

Against the services provided by the navy, however, we must weigh the costs incurred because of it. First, Congressional expenditures on the building, manning, and repair of the navy helped drive the government into virtual bankruptcy by 1780.[33] William Fowler, whose *Rebels under Sail* is probably the best study of the Continental navy, estimates its cost at $12,500,000 to $13,500,000 or about 8 percent of all Congressional spending.[34] Congress, lacking the power to tax, had to live on borrowed money; expenditures on the navy, whatever their amount, hastened the collapse of the govern-

23. W. M. James, *The British Navy in Adversity: A Study of the War of American Independence* (London: Longmans, Green and Co., 1926), 102-04, 165.

24. Claude A. Lopez, "Benjamin Franklin, Lafayette and the *Lafayette*," *Proceedings of the American Philosophical Society* 108 (June 1964), 181-223.

25. Allen, *Naval History of the American Revolution,* 2:556-57.

26. David Syrett, *Shipping and the American War, 1775-83: A Study of British Transport Organization* (London: Athlone Press, 1970).

27. Morison, *John Paul Jones,* 225, 227, 245.

28. Morgan, "American Privateering," 84-85; Neeser, *Statistical and Chronological History,* 2:284-91; Mark Mayo Boatner, III, *Encyclopedia of the American Revolution* (New York: David McKay, 1966), 897 (for number of prizes taken by Continental warships).

29. Albert Henry Smyth, ed., *The Writings of Benjamin Franklin,* 10 vols. (New York: Macmillan Co., 1907), 9:3-7; William Bell Clark, *Ben Franklin's Privateers: A Naval Epic of the American Revolution* (Baton Rouge: Louisiana State University Press, 1956).

30. Danske Dandridge, *American Prisoners of the Revolution* (Charlottesville, Va.: Michie Co., 1911), 246-47.

31. Fowler, *Rebels under Sail,* 118, 119; Butterfield, *John Adams Diary,* 2:269-92; Allen, *Naval History of the American Revolution,* 2:405-07, 546.

32. Jonathan Williams, Jr. to American Commissioners, 4 November 1777 (American Philosophical Society) discusses the cargo of *Deane* (at that time called *Lion*). For *Queen of France,* then called *La Brune* see Charles Isham, ed., *The Deane Papers, 1774-1790,* 5 vols. (New York: New-York Historical Society, 1886-1890), 2:357. For *Deane*'s carrying cargo see also Francis Wharton, ed., *The Revolutionary Diplomatic Correspondence of the United States,* 6 vols. (Washington, D.C.: Government Printing Office, 1889), 2:433.

33. Fowler, *Rebels under Sail,* 82-85.

34. Ibid., 70.

ment's credit and the debasement of its currency. Much of the activity of Franklin and the other American diplomats in Europe was devoted to its support either directly, through obtaining supplies for the navy, or indirectly, through obtaining foreign loans and grants for the American government. Navies were, and still are, incredibly complex and expensive; the United States of 1776 was an underdeveloped country trying to escape colonial status and lacked the financial and administrative base for building such a sophisticated tool of war.

Less easily measured are the indirect costs of the Continental navy. It was a continual drain on the attention and energy of American congressmen, members of navy boards and the board of admiralty, and other overworked civil servants. It caused endless difficulties for American diplomats, particularly in 1777, when American warships operating from French ports created great resentment in the French government by threatening to provoke a premature and potentially disastrous war between France and Britain.[35] Finally, the Continental navy proved a divisive factor in American politics. Rather than tying the country together, it repeatedly pitted New Englanders against Southerners on such questions as where ships should operate and where they should sell their prizes.[36] The shortage of ships led to continual competition between unemployed ship captains and their congressional supporters; shortage of crews led to squabbles about forcible recruiting;[37] repeated ship losses led to courts of inquiry and courts-martial which exacerbated bad feeling. Like many other military misfortunes the Continental navy began with enthusiasm, patriotism, and national vanity and ended in disillusionment and recriminations. Its occasional triumphs, however, have been more often remembered than have its more frequent defeats. Even this legacy has been a mixed blessing. Within thirty years the United States was involved in another hopeless war against the British navy, a war which in its turn would be idealized and romanticized by future generations.

What were the alternatives to establishing a Continental navy? Congress could have left coastal defense and convoy protection to the state navies, the war against British commerce to privateers, and naval support for the army to the army itself. It could then have chartered ships to carry supplies, messages, and diplomats. It is not surprising, though, that this did not happen. Given the enthusiasm of 1775 it seems in retrospect almost inevitable that Congress would establish a national navy. We can't say with any certainty what would have happened had it not done so. Nevertheless we would do well to withhold some of our applause for John Adams and the other delegates who won the debate over the navy. We might instead save a bit of it for that sceptical Marylander, Samuel Chase.

35. Jonathan R. Dull, *The French Navy and American Independence: A Study of Arms and Diplomacy, 1774-1787* (Princeton, N.J.: Princeton University Press, 1975), 75-83; Jonathan R. Dull, *Franklin the Diplomat: The French Mission* (Philadelphia: American Philosophical Society [*Transactions* 72: part 1]), 39-40.

36. Fowler, *Rebels under Sail*, 72.

37. Morgan, *Captains to the Northward*, 205 and *passim*.

Jonathan R. Dull is an associate editor of the Papers of Benjamin Franklin and author of The French Navy and American Independence: A Study of Arms and Diplomacy, 1774-1787 *(Princeton, 1975) and* Franklin the Diplomat: the French Mission *(Philadelphia, 1982). He is currently writing a diplomatic history of the American Revolution.*

The Navy's Battle Doctrine in the War of 1812

By James E. Valle

THE War of 1812 represents the United States Navy's longest period of sustained combat operations against an organized professional foe prior to the Civil War. As a result, much of its combat tradition and many of the standards of conduct which the modern navy espouses date from that period. It is possible, however, that some of the navy's experience in that war has been misunderstood. Too much emphasis may have been placed on victorious single-ship actions on the high seas and too little attention paid to the instances wherein American ships-of-war surrendered or suffered defeat at the hands of the British.

One way to gauge the navy's experience from 1812 to 1815 more accurately is to try to reconstruct the battle doctrine which the fleet espoused during that period. For this purpose we will assume that battle doctrine consists of the strategy and tactics which the service had developed to govern the handling of its ships in action and also the code of conduct regulating personal deportment in battle. It would be derived from experiences and precedents, notions of personal honor and the general knowledge reposing among professional officers about the capabilities and liabilities of each class of ship in commission.

The files of the Naval Judge Advocate General's Corps contain a number of interesting courts of inquiry and a few courts-martial which exhaustively investigate relatively obscure cases of surrenders or suspected misconduct in battle. These indicate that the navy's battle experience in the War of 1812 was more complex and equivocal than is generally realized. There is evidence that the navy failed to pay close attention to some problems and deficiencies that were exposed by defeats and that one prominent officer, Commodore Stephen Decatur, used a court-martial in a conscious effort to mold the ideals of the service and create guidelines for future action.

In order that a clear picture of the scope of naval action in this period can be presented, a table[1] has been compiled which lists all of the actions taking place between 1812 and 1815 and their results:

Successful Actions on Salt Water

Constitution vs. *Guerriere*	August 1812
United States vs. *Macedonian*	October 1812
Wasp vs. *Frolic*	October 1812
Constitution vs. *Java*	December 1812
Hornet vs. *Peacock*	February 1813
Enterprize vs. *Boxer*	September 1813
Peacock vs. *Epervier*	April 1814
Wasp vs. *Reindeer*	June 1814
Wasp vs. *Avon*	September 1814
Constitution vs. *Cyane* and *Levant*	February 1815
Hornet vs. *Penguin*	March 1815
Peacock vs. *Nautilus*	June 1815

Unsuccessful Actions on Salt Water

Chesapeake vs. *Shannon*, June 1813, JAG cases 158 through 161

Argus vs. *Pelican*, August 1813, JAG case 203

Essex vs. *Phoebe* and *Cherub*, March 1814, no naval investigation

President vs. *Endymion* and squadron, January 1815, JAG case 206

Surrenders to British Without Resistance

Nautilus to *British* squadron	1812	JAG case 119
Viper to *Narcissus*	1812	JAG case 136
Vixen to *Southampton*	1812	JAG case 139
Rattlesnake to *Leander*	1814	JAG case 204
Frolic to *Orpheus*	1814	JAG case 205
Syren to *Medway*	1814	JAG case 220

Successful Fleet Actions on the Northern Lakes

Defense of Sacket's Harbor, Lake Ontario, June 1812

Capture of schooners *Detroit* and *Caledonia*, Lake Erie, October 1812

Burning of York (Toronto), Lake Ontario, April 1813

Battle of Lake Erie, September 1813, see JAG case 206

Battle of Lake Ontario (inconclusive), August 1813, JAG case 205

Battle of Plattsburgh or Lake Champlain, September 1814

1. This table was compiled from several secondary sources and from the United States Judge Advocate General's Department, Records of General Courts Martial and Courts of Inquiry of the

without drawing raking fire, Decatur concluded that he had won an honorable victory and surrendered his ship to the next two frigates to come within range, *Tenedos* and *Pomone*. Although *President* had only moderate battle damage and one-fifth of her crew disabled, Decatur testified that the recoil of her own guns had started serious leaks and he was afraid that she would sink under him if he continued to fight her. The British had the added advantage that a ship-of-the-line stood ready to take up the fight if the two late-arriving frigates were disabled.[10]

It appears from the kind of questions asked that the court of inquiry was primarily interested in fixing the blame for the initial grounding of *President* and finding out how much damage had been done. Testimony demonstrated that the ship had pounded hard for more than an hour and developed major leaks and noticeable hull distortion but had been prevented from turning back by unfavorable winds and tide. The court also inquired as to whether the ship had been sailed on her best tack during the chase, whether Commodore Decatur had used 'intemperate or offensive language' towards the officers and crew, and whether the conduct of all the officers was uniformly satisfactory both in battle and in captivity. The court took particular relish in collecting testimony concerning the battle damage sustained by *Endymion* and repeatedly asked witnesses if they thought she would have struck her colors had she been alone when she fought *President*. None of these questions was answered in a way that could be construed as constituting criticism of Decatur.[11]

Two questions were studiously avoided. Nobody asked why Decatur had shot up *Endymion* so thoroughly when his initial plan had been to capture her. Likewise, the court never asked Decatur why he did not carry the fight to *Tenedos* and *Pomone*. It was to be later argued by critics of the battle that if *President* could have fired a few broadsides into each of these opponents before striking, then the blockading squadron off New York could have been effectively crippled at very little cost in additional damage or casualties to *President*.[12]

The court closed its inquiry with a judgment entirely favorable to Decatur. He was held blameless in the matter of the grounding and declared to have been a clear victor over *Endymion*. His surrender to overwhelmingly superior forces was deemed to be wholly justified and his conduct in captivity was impeccable.[13]

One major surrender was never officially investigated. This was Commodore David Porter's loss of the frigate *Essex* to the British men-of-war *Phoebe* and *Cherub*. Porter's official report of the action, a masterpiece of colorful reporting, was all the explanation that was deemed to be needed. Nevertheless, a significant lesson was drawn from his action off Valparaiso, and no American frigate ever went to sea again with carronades for a main battery. It was very tempting to attempt to increase a ship's weight of broadside by this method but the *Essex* battle clearly showed that an enemy who was aware of the situation could simply stay out of range and batter his opponent with his long guns.

In all of the navy's surrenders involving frigates, a clear reason for the adverse verdict of battle is evident. The action of the brig-of-war *Argus* which surrendered to HMS *Pelican* in the Irish Sea was less straightforward. *Argus* had departed New York on 18 June 1813, carrying the American minister to France. After departing Lorient on 14 July, she took nineteen prizes in British waters before she encountered *Pelican* on 14 August. For several days previous to this action, *Argus'* crew had been busily engaged in securing prizes and they had been awake all of the previous night. Consequently, they were in an advanced state of fatigue and greatly depleted in numbers from manning their captures. *Pelican,* although mounting the same number of guns as *Argus,* was a larger and stronger vessel and her main battery consisted of thirty-two-pounder carronades as opposed to *Argus'* armament of twenty-four-pounder carronades.[14] In a sharp action lasting a little less than an hour, *Argus* was completely defeated, being outmaneuvered, outgunned, and outfought. With her captain and first lieutenant both wounded and her rigging cut to pieces, she struck her colors to a virtually undamaged enemy.

The court of inquiry which investigated the conduct of her commanding officer, Master Commandant William H. Allen, seemed particularly concerned to establish whether or not *Argus* was in all respects ready for action and if there had been any dishonorable conduct among her officers or crew. One seaman was cited for cowardice and recommended for court-martial but the rest of the ship's company were deemed to have done the best they could under the circumstances.[15] *Argus'* very success as

10. Ibid., see the testimony of the several witnesses.
11. Ibid.
12. Dudley W. Knox, *A History of the United States Navy* (New York: G. P. Putnam's Sons, 1936), p. 129.
13. JAG Records, case 202, see the verdict of the court.
14. JAG Records, case 203. See also, Knox, p. 100.
15. Ibid., see the verdict of the court.

a commerce raider had proved her undoing, along with her small size and light main battery.

Not all of the navy's commerce raiders emulated *Argus* in giving battle to a superior enemy. During the War of 1812, five brigs and one sloop-of-war surrendered without a battle. Of the six vessels so lost, every one was outsailed by a British frigate or ship-of-the-line in fresh or heavy wind conditions. Each such instance was investigated by a court of inquiry and the transcripts of these proceedings demonstrate a remarkable uniformity of doctrine and procedure on the part of the commanding officers involved. The first step, on sighting and identifying a large enemy, was always to put the ship on her best point of sailing or to make for a neutral port. If the enemy was seen to be gaining, fresh water was dumped overboard, followed by the anchors, cables, and ship's boats. If this failed to bring about a sufficient increase in speed then the main armament and shot were jettisoned with the exception of a few guns that could be used as stern chasers if an opportunity to cripple the enemy's rigging presented itself. The most important task of the officers was to get the maximum possible speed out of the ship while maintaining perfect 'coolness and self possession.' They were not expected to fight a hopeless battle and, in most cases, the chase guns were never used so that all of the surrenders in this category were made literally without a shot being fired except to the disengaged side as a signal.

A typical example of such a case was the inquiry into the conduct of Master Commandant George Washington Reed for the surrender of the brig *Vixen*. According to his opening statement, Reed was returning to the United States after a thirty-day cruise when, on the morning of 22 November 1812, he sighted a strange sail which immediately turned toward him. Suspecting she was a warship, Reed made sail to escape, the winds being light and variable, but by ten o'clock it was obvious he was being overtaken. Reed got out his sweeps and the situation improved until a fresh wind came up at two o'clock. An hour later *Vixen*'s crew commenced to lighten ship, heaving the anchors overside to be followed by the water, spare spars, main armament, and some of the shot. This did not increase their speed enough so the wedges were knocked loose at the mast steps and the stays slacked off to give the rig more flexibility, also to no avail. At three-thirty the enemy tried a ranging shot and an hour later they were close enough to sheer off and present their broadside.

> . . . finding it impossible to excape and conceiving resistance against so superior a force would be a useless and wanton sacrifice of the lives of the crew, we fired a gun to leeward and struck our colors.

The frigate *Southampton* of thirty-two guns lowered her boat and sent an officer aboard to take possession.[16]

The court contented itself with the usual inquiry into the coolness and self-possession of the officers and men and their conduct while in captivity. When they had satisfied themselves on these points, they exonerated all parties from blame for the loss of the ship. They were, however, troubled by the absence of *Vixen*'s account books and records, and convened another inquiry so that Purser Edwin T. Satterwhite could explain the circumstances of their loss.

Satterwhite related that all the officers and men had been taken on board *Southampton*, whose captain had promised them they might return for their personal effects the next day. That night the wind freshened to a gale and *Vixen*, manned by a prize crew, foundered, taking all her papers and account ledgers with her.[17]

Another slightly more complicated case along these lines is that of the sloop-of-war *Frolic* which was lost on 20 April 1814. *Frolic* had been embarked on a cruise in the Caribbean in which she sank a Spanish privateer with one broadside. While sailing off the Cuban port of Mantanzes, *Frolic*'s captain, Master Commandant Joseph Bainbridge, sighted two sail, one of them a large vessel, to windward. Deducing that they were British, he shaped a course for the harbor but could not sail close enough to the wind to gain its entrance before the frigate, HMS *Orpheus*, headreached on him.

Seeing that he was being outsailed, Bainbridge decided to run in towards shore hoping either to elude the British in shoal water or run his own vessel aground to avoid capture. *Orpheus* had plenty of wind to work with, however, and kept gaining on *Frolic*. Bainbridge summoned his officers to the quarterdeck for a council of war and it was voted to attempt to lighten the ship. The water casks, shot, anchors and leeward guns were all thrown overboard while the weather battery was run out in an effort to keep the hull from heeling over too far under the press of sail being carried. All of these measures were to no avail and Bainbridge surrendered after once again polling his officers. By then the frigate was 'within pistol shot' and threatening them with her broadside.[18]

16. JAG Records, case 139.

17. JAG Records, case 137.

18. JAG Records, case 205, see the statement of Master Commandant Bainbridge.

In addition to the usual questions concerning conduct, the court questioned Bainbridge and his officers closely as to why he had abandoned his plan to beach his ship. Bainbridge testified that when he had gotten close enough he discovered that wind and surf conditions were so extreme that he felt that the grounding of *Frolic* could only have been accomplished with heavy loss of life among her crew. With this point satisfied, the court held him blameless in the loss of his ship and the proceedings were closed.[19]

Four more nearly similar cases of this kind, involving the brigs *Viper, Rattlesnake, Syren* and *Nautilus,* were heard and in every instance the questions asked by the court were substantially similar and the verdicts were identical. It is obvious that the primary concerns were regarding matters of conduct, deportment after capture, and whether all possible measures that seamanship dictated to improve a vessel's sailing had been exhausted. If the logic of events indicated that a surrender to superior force was in order, the courts had no difficulty accepting such behavior. After the war was over, the navy took the lessons taught by these six encounters to heart and built a new class of brigs with sharper hull lines and more extreme rigs.[20]

On the Northern Lakes, the Service found itself plagued with another sort of problem. In assembling squadrons to cruise lakes Erie, Ontario, Huron, and Champlain, small sloops and schooners mounting one or two guns each and carrying approximately thirty men were commissioned. In the course of the war eight of these vessels were taken by the enemy, most commonly in actions that pitted them against shore-based opponents.

In the first such instance, Lt. Sidney Smith had been ordered by Commodore Thomas MacDonough to patrol the northern end of Lake Champlain in the shoal draft sloops *Eagle* and *Growler*. On 3 June 1813, Smith spotted three British gunboats which he chased into the mouth of the Sorel River after a lake pilot had informed him that the estuary had deep water and plenty of room to maneuver. As soon as the American vessels entered the Sorel, they were attacked by marksmen and artillery concealed on each bank. They also discovered that the river was narrow and shoal. The two sloops could not be turned except with great difficulty and they were quickly holed. *Growler* sank in the stream after firing off all her ammunition and *Eagle* was overwhelmed by an infantry attack after she had been beached in sinking condition.

Clearly, Smith had run into a classic ambush, compounding his error by placing his trust in a treacherous pilot. Since testimony[21] established that both sloops had fought until all their shot was exhausted, their hulls riddled, and their decks overrun with boarders, no imputation of blame or misconduct was attached to Lieutenant Smith and he was absolved from any blame in the loss of his ships.[22] The court did suggest that some use might have been made of boarding nets. The two sloops were later salvaged and added to the British squadron on the upper lake.

Approximately a year later, Lt. Augustus Conklin, a veteran of the Battle of Lake Erie, lost the schooners *Somers* and *Ohio*. These two small vessels, each mounting one gun, were anchored off Sandusky on the morning of 12 August 1814. At first light, they were approached by several large canoes from the shore. When hailed from *Somers'* deck, the men in the canoes replied that they were coming alongside with supplies and provisions. Allowed to secure to the gangways, they suddenly disgorged a large force of British troops and Indian auxiliaries who stormed the decks, secured the hatchways and pinned the sleeping crews below in their hammocks. *Ohio*'s deck watch put up a little resistance but *Somers* surrendered without a struggle.[23]

In this instance, the British simply took advantage of the fact that the Americans had neglected the most elementary precautions. The court of inquiry also contrived to overlook the fact that no boarding nets had been rigged and no recognition signals or pass codes agreed upon. This was particularly galling because the lake schooners had very low freeboard and practically no bulwarks so they were vulnerable to an assault from shore-launched small craft. After the usual testimony about deportment had been taken, the court decided that *Ohio* 'was well defended and not surrendered till [*sic*] overpowered by very superior numbers.'[24] Conklin was held entirely blameless in the loss of the two vessels.

This verdict is singularly strange because both Conklin and the navy should have known of the danger. A year earlier, in September 1813, Lt. Daniel Turner had lost the schooners *Tigress* and *Scorpion* on Lake Huron under similar circumstances. Turner had been doing patrol and blockading duty in the vicinity of Nottawausaga Bay when a series of gales made it unsafe for his tiny squad-

19. Ibid., see the testimony of the several witnesses.

20. Howard I. Chappelle, *The History of the American Sailing Navy* (New York: W. W. Norton and Co., Inc., 1949), p. 292.

21. JAG Records, case 200.

22. Ibid., see the verdict of the court.

23. JAG Records, case 218.

24. Ibid., see the verdict of the court.

ron to remain in the principal cruising area off the mouth of the Wausaga River. A rendezvous was agreed upon and the schooners separated to ride out the storms as best they could. That was on the first of September. Two days later *Tigress,* having run for shelter, was lying at anchor in Gloucester Bay when she was attacked at dawn by troops of the Newfoundland Regiment who approached her in canoes and carried her by boarding. Although she had no boarding nets rigged, she resisted this assault until all of her officers were 'cut down.'[25]

Once in possession of *Tigress,* the Newfoundlanders, led by a British naval officer, placed two additional cannon on board her to supplement the single twenty-four pounder she normally carried, packed some seventy men into her hold, and set out to look for *Scorpion.* At first light on the morning of the fifth, *Scorpion*'s deck watch sighted *Tigress* approaching the former's anchorage at St. Joseph's Bay. Since this was the agreed-upon meeting point, no alarm was taken and she was allowed to come alongside. The British were able to storm *Scorpion*'s deck and immobilize her crew below decks. Lieutenant Turner awoke to find a British officer's sword point at his throat.[26]

Critical deficiencies in equipment and procedure were revealed by the questions put to witnesses at the court of inquiry. It developed that neither ship possessed boarding nets although they both had no bulwarks and habitually operated close inshore. Also, they possessed no signalling equipment and had established no recognition codes or procedures. Although these circumstances were freely admitted, no blame was imputed to Turner because his conduct was otherwise honorable. He had not defended his ship, the court opined, because of 'circumstances beyond his control.'[27] Apparently it did not occur to either the court or the Navy Department to publicize the results of this court of inquiry throughout the squadrons on the lakes. Had this been done perhaps the commander of *Somers* and *Ohio* would not have made almost exactly the same mistakes and omissions that Turner did.

Indeed, it is difficult to understand why the courts of inquiry that heard these cases made almost no mention of the obvious lapses and errors that had resulted in the loss of eight warships on the Great Lakes and six on the high seas. It is apparent that they were much more interested in establishing the fundamental moral soundness of officers who surrendered than they were in highlighting the professional mistakes or unsound tactics that had led to defeat.

There is really only one possible exception to this trend. When Master Commandant James Renshaw was investigated for having surrendered the brig *Rattlesnake* to HMS *Leander* off Halifax, Nova Scotia, the court saw fit to offer some professional judgments. *Rattlesnake* had been on a long commerce-raiding cruise in European waters. At the beginning of this expedition, she had been chased by a British frigate off the Azores which she managed to elude by throwing all of her guns overboard. Renshaw fashioned a 'quaker' battery out of spare spars and managed to capture several prizes by bluff before depletion of his crew and dwindling stores obliged him to sail for home.[28] *Rattlesnake* shaped a course for Penobscot Bay but cumulative navigational errors brought her to a landfall off Halifax where she was chased, outsailed and forced to strike her colors to *Leander.*

The court of inquiry questioned Renshaw closely about his methods of navigation which had been thrown off by almost perpetual cloud cover so that he had to rely entirely on dead reckoning. The court left no doubt in anybody's mind that they believed that even a dead-reckoning plot of nearly three weeks' duration could have been more accurate than Renshaw's was. They reserved their main criticism, however, for his decision to continue his cruise in an essentially disarmed condition. Why, they asked, had he not gone into a French port to procure new armament and stores? Renshaw testified that he had decided on this step but, when he was a day's sail from the French coast, he spoke with the master of a merchant ship who informed him that Napoleon had suffered severe battlefield reverses and that his cause was on the point of collapse. In the light of this news, Renshaw opted to come home.[29]

The court did not accept this line of argument. They could find no evidence of disloyalty, cowardice, or improper deportment so they delivered themselves of the opinion that errors had been committed in judgment and navigation but that *Rattlesnake* had not been lost through inattention or neglect. They opined that Renshaw should have gone to France and gotten new guns, but ultimately they did not recommend a court-martial. Renshaw suffered no penalty for the loss of his ship.[30]

25. JAG Records, case 207, see the statement of Lieutenant Turner.

28. JAG Records, case 204, see the statement of Master Commandant Renshaw.

29. Ibid. The entire cruise of *Rattlesnake* took place after Napoleon's forces had given up Paris, which they abandoned in April

Although it had been demonstrated repeatedly that the main reason that losses of ships to the enemy were investigated was to uncover evidence of cowardice or personal misconduct, the one naval court that got an opportunity to hear a case that involved a real fundamental question of personal honor showed a curious passivity and lack of zeal in prosecuting the officer involved. The conduct of Master Commandant Jesse Duncan Elliott at the Battle of Lake Erie seemed highly dubious, and even though the action ultimately ended in an American victory, there were repeated murmurings about the apparent unwillingness of *Niagara*'s commander to come to the support of the flagship *Lawrence* for most of the fight.

No officer present at the Battle of Lake Erie attempted to press charges against Elliott immediately but word eventually leaked out that testimony given at the trial of the British commander, Captain Barclay, which was conducted at Halifax after the war was over, had been highly critical of Elliott.[31] To scotch these allegations, Elliott requested a court of inquiry which was duly organized and took testimony from as many officers who had been at Lake Erie as it was possible to assemble. A large body of testimony was taken relative to Elliott's part in the battle but much of it was contradictory or inconclusive. The court eventually concluded that Elliott had acted properly, basing its opinion on the one indisputable fact to emerge, namely that Elliott's *Niagara* had honorably traded broadsides with the British *Queen Charlotte,* forcing her to break off the action. The charges arising from the British court-martial were found to be 'malicious and unfounded in fact.'[32] This verdict never silenced Elliott's critics, but a subsequent effort to bring charges against him was quashed for political reasons.

In analyzing this compendium of cases and combining the lessons they contain with the more widely known victorious encounters, we can get a more balanced view of the navy's combat experience in the War of 1812. Obviously the single-ship victories showed that heavier guns and scantlings and superior gun drill were the keys to victory. This lesson was taken to heart and for as long as the sailing navy lasted, American naval constructors built major warships that were larger and more powerfully armed than vessels of similar rate in the European navies. The unsuccessful saltwater actions only served to reinforce the rule.

The surrender of the smaller brigs to larger opponents reversed naval thinking concerning the qualities needed to make a successful naval commerce raider. The older notion that the navy's brigs should be moderate in rig and hull form so that they could better withstand battle with equivalent ships of other navies gave way to the realization that the lighter, swifter lines and loftier rigs favored by privateers would yield better results.

The losses of the smaller schooners on the lakes seem never to have resulted in any improvement in naval doctrine. Perhaps the ships were too inconsequential to matter. At any rate, the navy never did campaign on the lakes again, and the instances where small schooners were lost to boarders from the shore are all but forgotten.

James E. Valle was born in Oakland, California, on October 13, 1943. *He attended various schools in the Bay Area and received his Bachelor of Arts degree in History from San Francisco State University in* 1965. *After completing a Master's Degree in United States History at UCLA in* 1967, *he moved to Dover, Delaware to begin his full-time teaching career at Delaware State College. In* 1971 *he began work on his Ph.D. at the University of Delaware where he specialized in the field of Maritime and Naval History under the mentorship of James M. Merrill, Sea Grant Professor of Maritime History and director of the University of Delaware Press. Dr. Valle was awarded his Ph.D. in* 1979 *and his dissertation was published by the United States Naval Institute as* Rocks and Shoals, Social Order and Discipline in the United States Navy, 1800-1861. *Dr. Valle is the author* of one other book, *The Iron Horse at War,* which is an account of the contribution of American Railroads to the national war effort during World War II. It was published by Howell-North Books in 1977.

Dr. Valle is married and has two children. His hobbies include sailing, railfaning, camping, book collecting and researching local nautical lore and history. He is an Associate Professor at Delaware State College and is presently serving as Chairman of the Department of History and Political Science. He is also an active member of the Naval Institute and the United States Coast Guard Auxiliary.

31. JAG Records, case 206, see the verdict of the court.
32. Ibid.

Remembering Days in Old China:

A Navy Bride Recalls Life on the Asiatic Station in the 1920's

By Evelyn M. Cherpak

I first met Wilma Sinton Miles, wife of the late Vice Admiral Milton E. Miles, in February 1974 at the Naval War College where I was Curator of the Naval Historical Collection, the institution's depository for archives and manuscripts. Mrs. Miles had come to Newport, Rhode Island, to present to the College her collection of personal papers and photographs that documented her travels all over the world during her husband's naval career. In the course of arranging the manuscripts, I became fascinated by an account of her experiences as a young Navy wife in China during the troubled decade of the 1920's. Her reminiscences told of a simpler era, of a smaller and more familial Navy as yet unaffected by technological change, and of a way of life now known only to septuagenarians.

Wilma Jerman enjoyed a comfortable, secure middle-class existence in Washington, D.C., where she was born on 20 March 1904 to Charles and Ettie Sinton Jerman. Her father, who was in the real estate business, came from Virginia and her mother from Keokuk, Iowa. In those days Washington was still a small town and Wilma enjoyed riding streetcars all over the city. The family moved often due to fluctuations in the real estate market, and in order to maintain a stable income Mrs. Jerman worked for the Children's Bureau. This left Wilma with much of the responsibility for the management of the household and the preparation of meals. Yet these newly acquired duties did not prevent her from enjoying girlhood fun, such as starring in school plays and celebrating the 1918 armistice.[1]

In mid-September 1919, fifteen-year-old Wilma Jerman was sunning herself on a pier at Arundel-on-the Bay, Maryland, a small resort on the Chesapeake, when three midshipmen glided by in a sailboat and asked for directions to the nearest grocery store. Little did she realize that this chance encounter would change the course of her life. The midshipmen invited Wilma, her mother, and a friend for a sail and they, in turn, asked the trio to join them for a supper of ham and biscuits at their cottage nearby.[2]

The youngest and quietest of the group, Milton E. Miles, dubbed 'Mary' because of the midshipmen's fascination with a popular actress of the period, Mary Miles Minter, and their penchant for nicknames, was nominated to write the thank-you note to the Jermans at their Washington, D.C., address. He also asked to see them again at their Maryland cottage, and Mrs. Jerman responded by inviting him for a weekend in early November, not realizing that the area was off limits to midshipmen.[3] Soon the courtship of Wilma and Milton was off to a start.

Wilma was accustomed to the presence of the military in Washington, as they were there in great numbers during the First World War. She had met soldiers on her holiday train trips to Maryland and had participated in the war effort by knitting scarves and writing letters to the troops.[4] Thus the attentions of a midshipman were neither unusual nor unwelcome; the prestige of the military was high in the postwar years and patriotism was still part of the collective consciousness. Consequently families openly welcomed young officers into their homes as prospective suitors for their daughters.

Milton was born on 6 April 1900, in Jerome, Arizona, to Lewis and Mae Belle Robbins. When he was five the family moved to California where his father obtained work as an engineer. Several years later Lewis Robbins was killed, an innocent bystander in a brawl, and Mrs. Robbins moved the family again, this time to Washington state where she supervised a kitchen in a lumber camp near Puget Sound. There she met and married Army Corporal George Miles who adopted Milton. Unhappy with his home life, Miles ran away at age thirteen to Seattle where he attended Broadway High School and

1. Newport, R.I., Naval War College Naval Historical Collection, MS. Coll. 26, Wilma S. Miles Papers, Typescript Reminiscences of Wilma S. Miles, Chapter 1, p. 2.
2. Ibid., p. 3.
3. Ibid.
4. Ibid., p. 2.

supported himself by working at a variety of odd jobs.[5]

When the United States entered World War I in April 1917, he left school and enlisted in the Navy. His first assignment was in USS *Saratoga,* which patrolled the west coast and captured the German ship *Sierra* off the Gulf of Tehuantepec. A second tour of convoy and patrol duty in USS *Beale* stationed in Queenstown, Ireland, followed next. There he studied for and passed the entrance examinations for admission to the United States Naval Academy. Ironically, he passed the examinations twice; the first set of papers was on a ship that was torpedoed while crossing, but the second set made it through safely. In June 1918, six months before the war ended, he entered the Academy as a member of the class of 1922.[6]

The winning of independent-minded Wilma was not an easy task for her midshipman. Although Milton sent her roses on her sixteenth birthday, and visited the Jerman home during his annual September leave, Wilma was still very young and did not want to be tied to one beau. She tactfully told Milton just that when he presented her with a miniature of his class ring at the 1921 Academy Ring Dance. When she refused to accept it, he threw it into the Chesapeake Bay, vowing that no one but she would ever wear it.[7]

That September Wilma began college at Cornell University in Ithaca, New York. Milton accompanied her on the train as far as Philadelphia and during the ride presented her with another miniature ring studded with diamonds and rubies. This time she accepted it for fear he might throw it out the train window. However, she only promised to hold it, not necessarily to wear it, and she kept it in a safe at the university where it stayed for three years.[8]

After graduation from the Naval Academy in 1922, Ensign Milton E. Miles received orders to the Far East as a communications officer in USS *Huron,* flagship of the Asiatic Fleet. For the next three years their courtship was solely an epistolary one.[9] Wilma was fascinated by his letters recounting his adventures in Asia—from rescuing and aiding victims of the 1923 earthquake in Japan to following United States Army 'round-the-world flyers from Singapore to Rangoon to Calcutta to supply them with oil and gas. By the time her senior year was half over she decided that the life of a Navy wife would have far more appeal than her career plans in the agricultural extension service, so she took the ring out of the safe and wore it.[10]

Plans for a reunion and a wedding in Honolulu, Hawaii, were made, and after Cornell graduation Wilma and her mother set out for the west coast by train, visiting the national parks along the way. In the midst of their trip Milton wired that his return ship, USS *Chaumont,* had been preempted by Congressmen on tour, and there was no room for him. He was to remain in China as executive officer of the gunboat USS *Pampanga* on the South China Patrol in the West and Pearl Rivers.[11]

Immediately, Wilma's plans changed. When they reached California her mother bought her a round-trip ticket (just in case she changed her mind about her fiancé) to Hong Kong aboard the Dollar Lines SS *President Cleveland,* and she set sail in August 1925 on the month-long voyage.[12] Although American girls are quite blasé about traveling alone anywhere today, a single female traveling unaccompanied to an exotic place like China was a rarity in the 1920's. Proprieties were still scrupulously observed and female behavior was subject to scrutiny and comment. Moreover, the world was still a relatively large place and overseas travel by ship was a luxury enjoyed by only the very wealthy. Wilma, however, settled into shipboard life easily, playing bridge and reading novels to pass the time away. Stops at Yokohama, Kobe, and Shanghai helped to make her journey more enjoyable.[13]

On 3 September 1925, SS *President Cleveland* sailed into Hong Kong harbor, and the gig from *Pampanga* with Lieutenant Milton E. Miles aboard moored alongside her. It was no small feat for him to be there to meet his bride-to-be, for Commodore Constein, head of the South China Patrol and a gruff, old bachelor, viewed romance with disdain and was loath to let the ship leave Canton where it was guarding the foreign settlement on Shameen Island. But since *Pampanga* was low on coal, Milton and LCDR Dugger, his commanding officer, were allowed to bring her to the city for three days to refuel.[14]

5. Newport, R.I., Naval War College Naval Historical Collection, MS. Coll. 26, Wilma S. Miles Papers, Typescript Biography of Milton E. Miles, pp. 1, 3, 3a.

6. Ibid., pp. 4, 6-7.

7. Ibid., p. 10.

8. Ibid.

9. Ibid., p. 11.

10. Reminiscences of Wilma S. Miles, Chapter 1, p. 8.

11. Ibid. LCDR Greene Dugger had taken command of *Pampanga* from CDR E. Winfield Spencer, whose wife Wallis would later become the Duchess of Windsor, and requested Miles as his executive officer.

12. Ibid. Wilma was willing to delay her marriage until Milton's Far East tour of duty was over, but her mother was fond of Miles and persuaded her to make the journey.

13. Newport, R.I., Naval War College Naval Historical Collection, MS. Coll. 26, Letters from Wilma S. Jerman to Mr. and Mrs. Charles Jerman, 24 August 1925 and 8 September 1925.

14. Ibid.

The very next day, 4 September, Lieutenant Miles and Wilma Jerman were married at noon at Hong Kong's Union Church, with American Consul Roger Tredwell acting as father of the bride.[15] Their abbreviated, weekend honeymoon was spent at the Repulse Bay Hotel on the other side of the island, where at four on Monday morning Milton left for a month of patrol duty in Wuchow. This was the first of many such partings, one of the more difficult aspects of Navy life. Wilma spent the rest of her honeymoon alone before moving into a bedsitting room complete with flushing system, a rarity in Hong Kong, that Milton had located for her in a Kowloon pension. Remembering those days she wrote: 'I was on my own, not really conscious as yet that I was a Navy wife. In fact, I left our marriage license in a copy of Somerset Maugham's *Green Hat* in the hotel bureau drawer.'[16]

Wilma Miles had come to a country in ferment, a China that was in the midst of radical political, social, and economic changes. Sun Yat-sen had died six months before her arrival, but his movement for nationalism, democracy, and livelihood had attracted the support of many who were disillusioned with a traditional and stagnant society under the thrall of foreign powers. He had dreamed of a unified China, free from western domination, and elicited the aid of the Soviets to help him achieve his goals. They complied by sending Michael Borodin, a Comintern agent, to serve as his political advisor. Borodin propagandized, directed the efforts against foreigners, and organized the nascent Kuomintang into a modern, leftist political party.[17]

Strong anti-foreign sentiment and activity, aimed especially at the British, were widespread in South China in 1925. The Chinese despised the privileges granted to foreigners by the unequal treaties, namely immunity from Chinese law and tax exemptions for businesses, which were backed up by the presence of foreign warships. They were given vague promises at the Washington Naval Conference of 1921-1922 that the treaties would be revised but nothing was done; foreign ships would not leave until they were able to maintain order in their own country.[18]

That summer a number of protest marches, attacks on foreigners, murders, and a general strike occurred in Hong Kong. The strike halted services to foreigners including the sale and delivery of goods and the employment of Chinese household servants. Those, like Wilma, living in pensions or hotels endured special hardships. In the residences occupied by foreigners, chores were divided; women did the housekeeping and cooking while men did the marketing. Since indoor plumbing did not exist, and the honeypot men no longer made their rounds, male residents had to assume the unpleasant business of disposing of the contents of chamber pots.[19]

Even more unsettling were the activities of warlords who vied for control of the countryside and of pirates and bandits who preyed on their own people as well as foreigners. The warlords, with their private armies, had no ideology or cause beyond their own personal enrichment and territorial aggrandizement. Since strong central government no longer existed in China, they were not subject to formal control and made war and peace at will.[20]

Consequently it was an exciting and a dangerous time for a twenty-one-year-old Navy bride to be alone in Hong Kong, as much of the time she was. During that first year of marriage *Pampanga* returned to the city three or four days once or twice a month and only two weekends. When Lieutenant Miles had leave they walked and hiked all over the city (although walking meant a distinct loss of face for the foreigner), shopped, dined at native restaurants with a Chinese hired host, swam, and attended parties on the Peak, an area of fashionable residences on the mountains above the city.[21]

When Milton left Wilma's routine changed, for Hong Kong was not a sophisticated city like Shanghai and lacked activity for an energetic young woman. Her days were spent exploring old Kowloon, where she saw native life firsthand, swimming off launches, sewing, and reading novels, almost one a day for months. These were the only books she could get from an Enlisted Men's Library at British Regimental Headquarters nearby. As a result, she grew to hate novels.[22]

Making friends was difficult in Hong Kong which was still a preserve of the Royal Navy. The British Navy wives kept to themselves and most of the American women had left because of the growing political strife. Consequently the first six weeks were lonely and boring for Wilma, punctuated only by a severe bout of dengue fever and malaria which took her, despite her protests, to

15. Ibid.

16. Reminiscences of Wilma S. Miles, Chapter 1, p. 11.

17. F. Gilbert Chan & Thomas Etzold (eds.), *China in the Twenties: Nationalism and Revolution* (New York: New Viewpoints, 1976), p. 43.

18. Ibid., pp. 179, 181, 185.

19. Reminiscences of Wilma S. Miles, Chapter 1, p. 10.

20. Ibid., Chapter 2, p. 8.

21. Biography of Milton E. Miles, pp. 33, 34. Only one hotel and two restaurants were open to foreigners living in Hong Kong. Therefore, the Mileses often hired a Chinese host to gain admittance to native restaurants.

22. Reminiscences of Wilma S. Miles, Chapter 2, p. 1.

the French Hospital. By the time her husband came down from Wuchow to see her, doses of quinine had done their work and she was on the mend. About those first months she philosophically wrote: 'Actually, I hadn't expected life in the Navy to be easy, and wasn't surprised at the difficulties.'[23] Even then, the privileges far outweighed the hardships.

It was not until Thanksgiving, when *Pampanga* fortuitously was in port, that Wilma became well acquainted with her husband's ship. Flagship *Huron* was in as well and she went down to see both ships render ceremonial honors to visiting dignitaries. The color, pomp, and music accompanying the proceedings thrilled her and made her proud to be associated with the United States Navy. However, her initial impression of *Pampanga* was less than favorable, for it did not look like a Navy ship—less than one hundred feet long and twenty-five feet wide, with a cast iron hull, painted yellow and white to blend with its riverine surroundings rather than the traditional gray.[24] And in many ways she was right. *Pampanga* was indeed an unusual ship whose entry into the fleet came by a circuitous route.

The schooner-rigged gunboat was originally built for the Spanish Navy in 1887 by the Manila Ship Company of Cavite, Philippines, and was used to patrol the southernmost islands. She was commissioned into United States service in 1899—one of the spoils of the Spanish American War—and aided in quelling the Philippine insurrection. During the next decade she served as a ferry boat between Manila and the United States Naval Base at Cavite until sunk by a typhoon. Resurrected from the deep in 1915, the following year she joined the Asiatic Fleet assigned to the South China Patrol. There the feisty, small ship earned respect on the river in her altercations with pirates and warlords who, incidentally, nicknamed her 'the gunboat that shoots.' *Pampanga* remained in the fleet until she was decommissioned in November 1928 and then sunk by gunfire off the China coast, her days of service over.[25]

During 1926 the gunboat spent most of her time accompanying cargo lighters up the West River and guarding the foreigner settlement on Shameen Island opposite Canton. The island, a sand and gravel pit when it was ceded to the British after the Opium Wars in 1842, had been beautified over the years and now excited the envy of the Cantonese. Its tree-lined streets with fashionable residences faced the busy port across the narrow Pearl River. Two bridges, guarded by Chinese soldiers, connected the island to the mainland where foreigners could visit but not purchase goods or services.[26]

The winter of 1926 was a busy one for *Pampanga*. Although the depredations of pirates and the quarrels of warlords were periodic nuisances, a far greater threat to foreign lives and property came from politicized mobs who protested violently against the imperialists within their midst. An incident of this kind occurred in March when Southern Baptist medical missionaries in Wuchow were barricaded in the Stout Memorial Hospital by angry protesters. *Pampanga* was called to their rescue, and Milton led a landing party ashore to help evacuate the inhabitants. As the missionaries started to leave, the mob became angrier and began to push, shove, and throw stones. Dr. Leavell, head of the hospital, who had just conferred with Lieutenant Miles, announced to the crowd that they had a magic weapon capable of blinding them which they would use if they were not allowed full egress. The disbelieving Chinese hooted and cried, but with the first blast of ammonia water from Miles' flit gun they dispersed, and the evacuees safely made their way aboard *Pampanga*.[27]

The grateful missionaries repaid their rescuers by sending them ten cases of beer—enough for two picnics—and to Milton, who didn't smoke, a silver cigarette case. Perhaps the most useful find of all was the thirty-two-volt Delco generator which they hated to abandon but didn't have room for on their houseboat, already loaded down with personal goods. The generator was taken on *Pampanga*, and Lieutenant Miles and his crew, along with an electrician from USS *Helena*, installed some half-dozen outlets on the ship. Finally, after thirty-five years, *Pampanga* had electric lights.[28]

Milton's ingenuity and talent for experimenting parlayed the generator, coupled with a Harley Davidson motorcycle engine, into the first shortwave radio in the Far East Fleet. With it the ship's radiomen located signals from a group of scientists who were wintering in the arctic and had temporarily lost contact with the outside world. They happily reported that the men were safe and well. Perhaps the ship's proudest moment came when she volunteered to send messages to Washington, D.C., for flagship *Huron*, whose communication system had broken down. Admiral Clarence S. Williams, Com-

23. Ibid., p. 2.

24. Newport, R.I., Naval War College Naval Historical Collection, MS Coll. 28, Wilma S. Miles Papers, Letter from Wilma S. Miles to Mrs. Charles Jerman, 2 December 1915.

25. *Dictionary of American Naval Fighting Ships*, Vol. V (Washington, D.C.: U.S. Government Printing Office, 1970), p. 206.

26. Biography of Milton E. Miles, p. 35.

27. Reminiscences of Wilma S. Miles, Chapter 2, p. 5.

28. Ibid., p. 6.

mander in Chief of the Asiatic Fleet, was so pleased that he heartily recommended Miles when he applied for postgraduate school in electrical engineering.[29]

Early in 1926, martial law was lifted in Canton and wives of foreign businessmen and government officials were allowed to return to Shameen. This gave Wilma the opportunity to join her husband who was there for two weeks of guard duty. Each visit to Shameen brought its adventures, and this one was no different. One of the most interesting invitations that the Mileses received was to a meeting of the Nam-Ti Club, a political organization of South China students who had returned from university studies in Europe and the United States.[30] Although Chiang Kai-shek, the club's most prominent member, was absent that evening, they did meet General Wu Te-chen, Chief of the Canton Police, whose help in later years proved invaluable. He took an interest in Wilma and queried her about her knowledge of Chinese history. Admitting to limited sources—the only two books on China she could get were from the ship's library—he dispatched Maurice Cohen, Sun Yat-sen's former bodyguard, to *Pampanga* the very next day with McNair's *History of Modern China* for her. Several weeks later, back in Hong Kong, she heard that the General had been arrested by Borodin's people for not being 'Red enough' and had been beheaded.[31] Twelve years hence, again on duty in China, Milton met the General, who was still very much alive, and requested permission for the Miles family to exit the country over the newly constructed Burma Road. Permission was granted.[32]

The summer of 1926 found Wilma again preparing to join her husband on Shameen. This time she ventured upstream on a well-protected British vessel complete with armed officers, Sikh Indian guards, and wire netting over the passenger areas. Although the countryside seemed peaceful enough, the area was infested with organized bands of pirates who were ready to board or waylay a foreign ship. Their tactics differed, depending on the occasion. Sometimes they signed on as crew members and then with the help of their compatriots on shore took over the ship, stole the cargo, and held the passengers for ransom; other times they swung nets or booms across the river as toll gates and then held up the vessel. They had become such a menace that the British Governor General declared a kind of unofficial war on them, and all ships, including *Pampanga,* were assigned pirate villages to demolish. Wilma's trip, however, proved uneventful and she made her way safely to her room at the Victoria Hotel.[33]

She arrived only to discover that the Victoria was a period piece, even for 1926. The front windows of the old wooden structure were completely boarded up because potshots from hostile crowds on the Canton shore had blown out the glass panes. Wilma, not courting danger, took a back room. Her accommodations were less than plush, for whatever the temperature dense clouds of mosquitos infested the storage wardrobes, and guests had to keep electric light bulbs burning constantly in them to prevent clothes from molding. Despite the inconveniences, the antique hostelry had its touches of elegance, including morning and afternoon tea.[34]

Summer in Canton brought heat, typhoons, and cholera. To cope with the heat and humidity of the Far East, Wilma had had her hair bobbed, and that proved to be of some help in the days prior to air conditioning. The oppressive weather also encouraged typhoons which came with little warning. The boat people living on the river seemed to sense a storm's approach and knew how to protect themselves. Their sampans and junks huddled close together and were rarely damaged, while the larger ships foundered. In July, Wilma witnessed a typhoon from her room where she nervously watched *Pampanga* being tossed about on the river.[35]

Even worse than the typhoons was the cholera epidemic that struck with severity that summer. Every day bodies were discovered floating down river. Since foreigners were not allowed treatment in Canton hospitals, ships' doctors had to do their best with whatever methods they had at hand. Dr. Miller of USS *Helena* inoculated cholera victims, including civilians and British sailors, with saline injections that stimulated recovery, while Milton treated his crew and Wilma with a new serum imported from the Philippines. Consequently few American sailors contracted the disease.[36]

Although Wilma's visits to Canton doubled their time together, they also doubled their expenses. A lieutenant's pay of $250 per month was barely adequate to support two people, hence most of their entertainments had to be cost free. Exploring Canton on foot and shopping were

29. Ibid., pp. 8-9.

30. Newport, R.I., Naval War College Naval Historical Collection, MS. Coll. 26, Wilma S. Miles Papers, Notes on Canton.

31. Ibid. General Wu Te-chen had been imprisoned, not killed, and was released in August 1927 when the Nationalists gained political control and expelled Michael Borodin and other Soviet agents from China.

32. Biography of Milton E. Miles, p. 73.

33. Notes on Canton.

34. Ibid.

35. Reminiscences of Wilma S. Miles, Chapter 3, p. 4.

36. Notes on Canton.

two of their favorite pastimes. Despite recurrent demonstrations against foreigners, the Mileses encountered little animosity from the Chinese they met. Milton enjoyed practicing his Cantonese and developing his bargaining skills with shopkeepers on these outings. Bargaining was both an art and a science with the wily merchants who never forgot the last price they quoted a customer, even if he came back three months later.[37]

Theoretically, foreigners were not allowed to buy goods in Canton, but members of the naval community had found a way to circumvent these restrictions through the time-honored custom of using the ship's compradore as the recipient of their purchases. The system worked rather neatly for the Mileses. Milton gave the shopkeeper a note designating the item purchased, its price, and the name of the *Pampanga*'s compradore, Kwang Yek-ching, to whom delivery was to be made. Kwang then paid the merchant in cash and turned over the goods to Miles.[38] Despite the chance for error, deliveries were punctual and the correct items always arrived.

Although prices were still high, shopping in Canton represented a saving of sorts; the same merchandise was twice the price in Hong Kong. The cost differential resulted from the exactions charged by river pirates to let the goods pass downstream and the changing value of the dollar determined by the local warlord.[39]

Wilma's summer stay in Canton was capped by a unique experience—being run aground in *Pampanga* with the fleet's new commander and the captain's wife. Usually a mishap of this sort required extensive reports and conjured up fears of court martial, but not in *Pampanga*'s case. Being run aground was a common occurrence, and she was so far from the watchful eye of authority that no one in the Navy's upper echelon ever knew. The latest incident took place when the gunboat was navigating up river and the channel shifted, leaving her lodged in the mud. By shifting weight, unloading gear, and rushing passengers and crew from side to side, she rocked herself loose and then dug her way out with propellers. Wilma had the dubious distinction of being one of few women aboard a United States Navy ship in this predicament.[40]

Although Hong Kong and Canton were fascinating, the Mileses longed to visit Peking before they left the Far East. They planned, read, and dreamed about the northern capital and even saved their wedding money to make the trip. In October 1926, the opportunity finally came and they bought steamer tickets for the two-week journey, but at the last moment Milton's new commanding officer refused to let him go and Wilma had to make the trip alone. It seemed that her second honeymoon, just like her first, would be spent without her spouse.[41]

After a month of sightseeing, shopping, and studying Chinese in Peking, a telegram reached her with news that Milton would arrive in two weeks.[42] Wilma was at the dock in Tientsin to meet him on the appointed day but discovered that his ship had pulled in down river at Taku instead. Lieutenant Miles, in a hurry to see his bride, climbed aboard a freight train and made his way along the roof to the engine cab when guards, thinking he wanted to steal the government's salt, began to shoot. Fortunately, the train lurched forward enough to deflect the shot, and he fell into the coal car and the arms of the engineer. Miles paid his fare in silver dollars and made it safely to his destination.[43]

Once in Tientsin, he didn't know where to find Wilma. After trying the local hotels and being erringly driven by the rickshaw man to the red-light district, his directions garbled in translation, he located her at the American consul's residence. Though covered with coal dust, he was a recognizable but thinner man. Actually, Lieutenant Miles was in Peking to have an undiagnosed ailment treated at the prestigious Rockefeller Institute, not to vacation with his wife.[44]

As it turned out, he had a severe case of malaria which repeated doses of quinine eventually eliminated. Once on the mend, he and Wilma enjoyed their month together in the ancient Chinese capital. Socially, the United States Navy rated higher in Peking than in Hong Kong, perhaps because there were so few naval officers there. Hence, the Mileses received dinner invitations from the American minister, the United States naval attaché and even a wealthy Italian (ex–WWI ace) and his American wife. They also met members of the Roy Chapman Andrews Expedition who were excavating in the Gobi Desert and had just discovered the first dinosaur eggs known to science. So ended their stay in Peking.[45]

37. Ibid.

38. Ibid. The practice of using 'compradores' to supply foreigners with goods was not exclusively a Navy practice but dated back to the eighteenth century when the British first penetrated China. At that time only a select group of merchants were allowed to purvey goods to Europeans.

39. Reminiscences of Wilma S. Miles, Chapter 3, p. 3.

40. Biography of Milton E. Miles, p. 39.

41. Ibid.

42. Newport, R.I., Naval War College Naval Historical Collection, MS. Coll. 26, Wilma S. Miles Papers, Letter from Wilma S. Miles to Mrs. Charles Jerman, 10 November 1926.

43. Biography of Milton E. Miles, p. 40.

44. Ibid.

45. Newport, R.I., Naval War College Naval Historical Collection, MS. Coll. 26, Wilma S. Miles Papers, Letter from Wilma S. Miles to Mrs. Charles Jerman, 22 December 1926.

Their last excursion before leaving Asia was to Portuguese Macao, the first port to which foreign ships were admitted to Imperial China. There they visited a fan-tan house, a Chinese gambling establishment, and then found the cemetery where the first American missionaries were buried. Next they entered a picturesque, old fort atop a hill. Lieutenant Miles returned the salutes of guards who let them pass and proceeded to photograph an embrasure with antique cannon balls in the foreground. Suddenly there was a flurry, and they were arrested and brought before the commanding officer who told them that they had illegally entered and photographed an operating fort. Milton explained in Naval Academy Spanish that they were tourists and didn't know. Despite his excuse, their film was confiscated and they were hastily escorted out. This was the first, but not the last, time Wilma was arrested with her husband.[46]

By the time the Mileses returned to Hong Kong in January 1927, political rivalries between the Nationalists and Communists had intensified, and the city was filled with soldiers. They were quartered in every available hotel and boardinghouse, so Wilma was forced to live out of a suitcase, moving sometimes nightly to take advantage of a free bed. Meanwhile, they received news of Milton's acceptance at postgraduate school in Annapolis but had to wait until his relief arrived in May to leave. That spring they boarded a Dollar Lines passenger ship for the return home.[47]

Arriving in Seattle, Washington, Wilma wrote: 'We are scared of everything, the crowds, the people, the white coolies, hotels, customs, and especially that we won't get the permission and assistance toward travel to San Bernadino that is necessary.'[48] But after her adventures in China, she would have no trouble facing all the other experiences that Navy life would bring to her in near and faraway places.

As a postscript, the Mileses' China adventures did not end here. In 1936, when Milton was on a three-year tour as squadron material officer in USS *Black Hawk,* Wilma accompanied him and lived with their three sons in Chefoo.[49] During World War II, from 1942 to 1945, Miles served as Commander, US Naval Group China and as deputy director of the Sino-American Cooperative Organization which coordinated United States and Chinese participation in the war against Japan. Their intelligence reports, guerrilla units, and weather monitoring contributed significantly to allied victories in the Pacific and the eventual defeat of the Japanese.[50] But that's another story.

46. Biography of Milton E. Miles, p. 43.

47. Ibid., pp. 43-44.

48. Newport, R.I., Naval War College Naval Historical Collection, MS. Coll. 26, Wilma S. Miles Papers, Letter from Wilma S. Miles to Mrs. Charles Jerman, 22 May 1927.

49. Biography of Milton E. Miles, p. 55.

50. *The Washington Post,* 26 March 1961, p. B8.

Evelyn M. Cherpak, Curator of the Naval Historical Collection at the Naval War College in Newport, RI, received a Ph.D. in Latin American History from the University of North Carolina, Chapel Hill, North Carolina, in 1973. *She has taught courses in Military History, Latin American History and Women's History at the Naval War College, Salve Regina College and Central Connecticut State University and has published in those fields.*

The Marquis de Chabert and the Louisbourg Observatory in the 1750's

By Kenneth Donovan

UNLIKE today's navigators, those in the eighteenth century did not have sophisticated instrumentation for determining latitude and longitude. Nevertheless, plotting an east-west course was relatively easy because navigators could rely on astronomical latitude, the angle between the plane of the earth's equator and a plumb line at a given point on the earth's surface. In the mid-eighteenth century, latitude was determined by two basic methods: by taking angle sights on certain polar stars or by measuring the angle of the midday sun above the horizon.[1] While computing latitude in the mid-eighteenth century was a quite accurate and far from onerous procedure, the same could not be said for the means of determining longitude, which is a measurement east or west of the prime meridian. Indeed, by the 1750's, navigators simply did not know how to obtain an accurate reading of longitude at sea. So desperate were such seafaring nations as England, France, Holland and Spain to render navigation an exact science, that they passed legislation offering substantial rewards and prizes to astronomers and navigators—in fact anyone—who could devise a proven method for calculating longitude.[2]

It was largely because of the imprecise nature of longitudinal measurements in North America—to say nothing of the world as a whole—that Joseph-Bernard Chabert de Cogolin, a relatively young but highly respected French astronomer, was commissioned in 1750 to go to North America to correct the maps of the coasts of Acadia, Isle Royale and Newfoundland. A native of Toulon, Chabert was born on 28 February 1724, the son of Joseph François de Chabert and Madeleine Bernard. Volunteering for the navy in 1741, he served as a cadet and pursued an active naval career for the rest of his life, eventually becoming a vice admiral by 1792.[3] Chabert's mission to Louisbourg in 1750 was not his first trip to New France for he had visited Acadia in June 1746 as a navigator on various vessels of Duc d'Anville's fleet. The fleet of Duc d'Anville—some thirty-one vessels in all—had left La Rochelle in the spring of 1746 in an attempt to recapture Louisbourg and, if possible, reconquer Nova Scotia. The venture by d'Anville proved a disaster for the fleet was devastated by a great storm. Chabert, however, charted a number of harbours including Chebucto, present-day Halifax.

Upon his return to France Chabert maintained that 'the marine maps were defective for almost all the coasts of this part of North America.'[4] He subsequently drew up a plan of observations intended to correct the maps in North America and presented it to the Minister of the Marine in August 1748.[5] While Chabert's recommendations were accepted in principle, it was not until March

1. M. de Chabert, *Voyage Fait Par Ordre Du Roi en 1750 Et 1751 Dans L'Amerique Septentrionale, Pour rectifier les Cartes des Côtes de l'Acadie de L'Isle Royale & de L'Isle De Terreneuve, Et Pour en fixer les principaux points par des Observations Astronomiques* (Paris: L'imprimerie Royale, 1753), 182-85. See also, Malachy Postlethwayt, *The Universal Dictionary of Trade and Commerce, Translated from the French of the Celebrated Monsieur Savary, Inspector General of the Manufactures for the King, at the Custom-House of Paris: With Large Additions and Improvements ...*, II (London: printed for John Knapton, in Ludgate Street, 1757), 21-22.

2. Postlethwayt, *The Universal Dictionary of Trade and Commerce, ...*, II, 103, 538-39; see M. Bouguer, *De La Manoeuvre Des Vaisseaux, ou Traité De Mechanique Et De Dynamique; Dans Lequel on Réduit A Des Solutions très-simples les Problems de Marine le plus difficiles, qui ont pour objet le mouvement du Navire* (Paris: Chez H. L. Guerin & L. F. De la Tour, rue S. Jacques, 1757). See in particular Chapter VII entitled 'Des Ascillations aux quelles les Navires & tous les autres Corps flottants sont sujets,' 220-27.

In 1752 Pierre Bouguer, along with the astronomer Pierre Charles Le Monnier and La Galissonière, had been selected by the Royal Academy of Sciences to examine Chabert's manuscript to determine if it should be published. There is an original edition of Bouguer's *La Manoeuvre Des Vaisseaux* at the Fortress of Louisbourg and a copy of his excellent work *Traité De Navire De La Construction, Et De Ses Mouvements* (Paris: Chez Ch. Ant. Jombert, 1746).

See also Henry C. King and John R. Millburn, *Geared to the Stars. The Evolution of Planetariums, Orreries, and Astronomical Clocks* (Toronto: University of Toronto Press, 1978), 127.

3. Kenneth Donovan, 'Canada's First Astronomical Observatory, 1750,' *Canadian Geographic*, vol. 100, no. 6 (December 1980-January 1981), 36-43.

4. *Le Journal Des Scavans, pour l'Année M.DCC.LIV Aoust* (Paris: Chez la Veuve Quillau, Imprimeur Juré-Librairie de l'Université, rue Galande, près la Place Maubert, 1754), 531.

5. Ibid.; Chabert, *Voyage Fait Par Ordre Du Roi en 1750 et 1751 ...*, 4.

Joseph Bernard le Marquis de Chabert de Cogolin.
(Musée de la Marine, Paris.)

1750 that he was called to Paris to meet the new Minister of the Marine, Antoine Louis Rouillé and his proposal to visit the coast of North America received final approval.

It was directly because of Chabert's subsequent visit to Isle Royale or Cape Breton in 1750 and 1751 that an observatory was eventually constructed in Louisbourg. The erection of a building to serve as an observatory in Louisbourg was no chance happening for Chabert's mission had the complete approbation of the former Minister of the Marine, Jean-Frédéric Phélypeaux, Comte de Maurepas, and his successor, Antoine-Louis Rouillé, who were both keenly interested in scientific and technical projects.[6] In fact, Roland Michel Barrin de La Galissonière, in his capacity as interim governor responsible for New France and director of the department of maps, was assigned the task of preparing Chabert's mission. In a memorandum to Rouillé, La Galissonière urged that every effort be made to provide Chabert with the requisite logistical support to make his voyage a success: 'I beg M. Rouillé to give orders to Captain du Vau when passing to have his instruments installed with all possible precautions for their preservation and to give sieur de Chabert every reasonable opportunity to make observations on shore, in case of putting into port, or even at sea.'[7]

The Ministry of Marine provided Chabert with an assistant, a vessel to take him overseas and all the instruments he would require for his observations. Describing his instruments Chabert noted:

> These consisted of a very good quadrant, which M. de Mairan was good enough to lend me and which he had made, under his direction, by Langlois, of nearly 2½-foot radius, equipped with a telescope, divided by transversals and by points, and furnished with a micrometer made by M. de Louville, with a second telescope for measuring angles, and several things that had been devised for its convenience; a seconds clock, telescopes of various sizes, and diverse other instruments for geometrical operations as well as for navigation. . . .[8]

In total Chabert brought no fewer than eight telescopes, six of which were refracting of 4, 6½, 8½, 10½, 15 and 18 *pieds* focal length. To complement his refracting telescopes, Chabert had a Gregorian reflecting telescope of 3 feet focal length. Other instruments included: a quadrant by Jacques Eugène Louville together with a telescope designed by Charles Marie de la Condamine; various terrestrial globes; celestial maps and tables by Sennex of London, and a Hadley octant.[9]

With his instruments carefully stowed away, Chabert departed Brest for Louisbourg on 29 June 1750 on the frigate *La Mutine*. Accompanying Chabert was his assistant Monsieur le Chevalier de Diziers-Guyon, a midshipman who was well known for his knowledge of geometry.[10] The voyage to Louisbourg was far from being uneventful for Chabert and Diziers busied themselves by taking depth soundings, verifying various recognizable

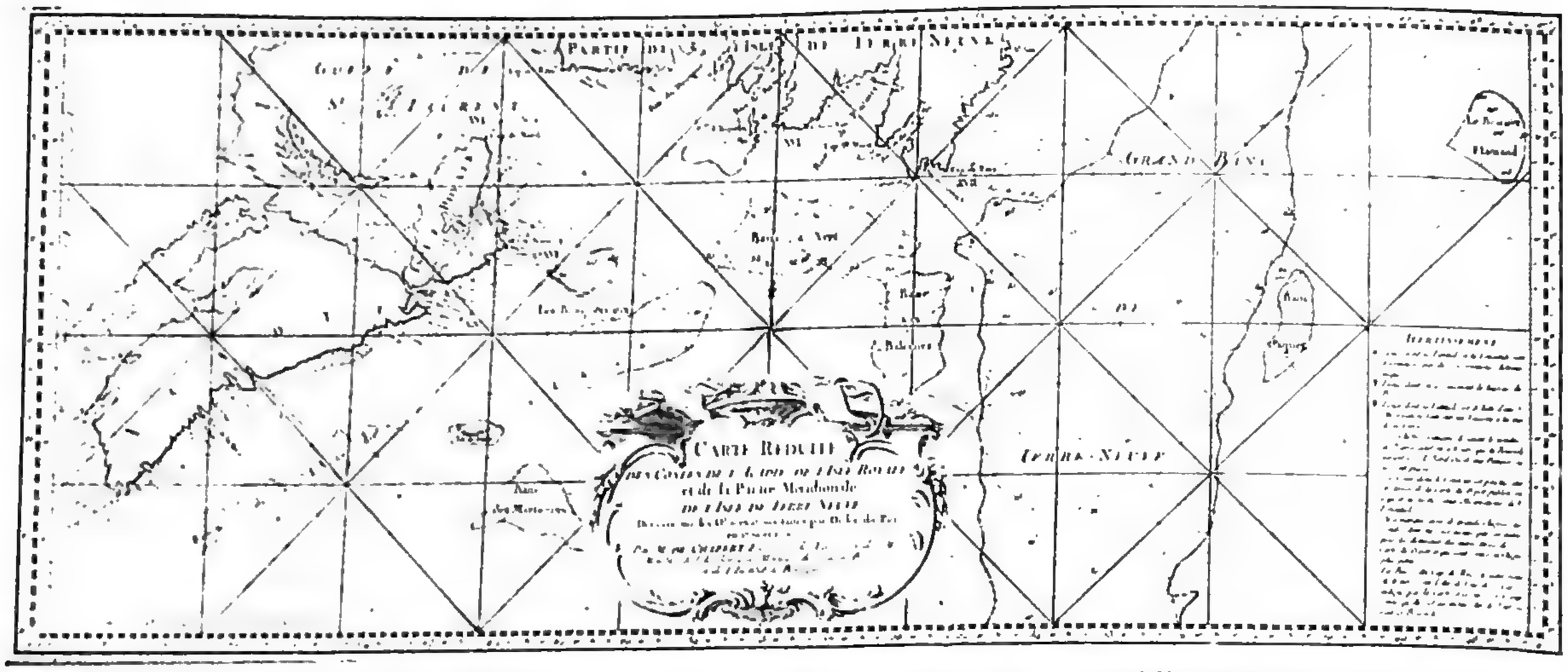
6. Roland Lamontagne, *Chabert De Cogolin Et L'Expedition De Louisbourg* (Montréal: Les Editions Leméac, 1964), 9.

7. Archives de France, Marine 111, I JJ, Reg. No. 1, '[Projet de] Memoire [à envoier à M. Rouillé] au sujet de l'Envoi du Sr. de Chabert a Louisbourg,' n.d., cited in Lamontagne, *Chabert De Cogolin Et L'Expedition De Louisbourg*, 12.

8. Chabert, *Voyage Fait Par Ordre Du Roi en 1750 et 1751 . . .*, 5-6. We have an original edition of Chabert's *Voyage Fait Par Ordre Du Roi* at the Fortress of Louisbourg, as well as six first edition maps by Chabert. 'Carte Réduite Des Côtes De L'Acadie, De L'Isle Royale et de la Partie Méridonde De L'Isle De Terre-Neuve, 1750-51.'

9. Ibid., 6. For the map of the zodiac by Senex of London, see 91. For the various telescopes see 193, 196, 277.

10. Ibid., 6.



An improved map of Acadia, Isle Royale, Isle St. Jean, and Terre Neuve was published by the Marquis de Chabert in 1753. The importance of the North Atlantic fishery was underlined by the detailed identification of fishing banks.

geographical points along the route, and comparing their positions with contemporary maps.[11]

After a successful voyage of forty days, *La Mutine* arrived off Louisbourg on 8 August but could not enter the harbour because of the fog. On the afternoon of the following day Chabert and Diziers stepped ashore at Louisbourg and were warmly received by Charles Desherbiers de la Ralière, Louisbourg's commandant and acting governor. Desherbiers and Chabert probably had much to talk about for Desherbiers, as a young man, had visited New France on a number of missions to map the area around Louisbourg and to chart and survey the St. Lawrence River.[12]

By the time of Chabert's arrival, Louisbourg had been resettled by the French for only a year and already there were approximately four thousand people in the fortress town.[13] Most of the town's citizens were refugees returning from France who recalled the heady days of Louisbourg's affluence from 1713 to 1745. Although captured by a combined force of New Englanders and the British navy in 1745, Louisbourg had been returned to the French by the Treaty of Aix-la-Chapelle in 1748. Louisbourg experienced abundant prosperity and growth during the first half of the eighteenth century because the seaport town relied upon a number of sound financial enterprises. Besides being the headquarters for a shore-based and labour-intensive dry salt cod fishery, Louisbourg was an entrepot for a lucrative French northwest Atlantic commerce, a base for the French navy and a heavily fortified garrison town. High wages and a constant demand for labour attracted hundreds of young fishermen, sailors and servants to Louisbourg each year. Furthermore, there were approximately five hundred troops stationed in Louisbourg from 1720 to 1745 and upwards of one to two thousand soldiers garrisoned in the town from 1750 to 1758. Such was the Louisbourg that greeted Chabert on that August afternoon in 1750.

Chabert initially set up his astronomical instruments in the governor's garden.[14] He could not work out in the open air for any length of time because of the cold, and even more significant, he could not find any building in town where he could conduct his observations. As an interim measure, Chabert established his instruments at

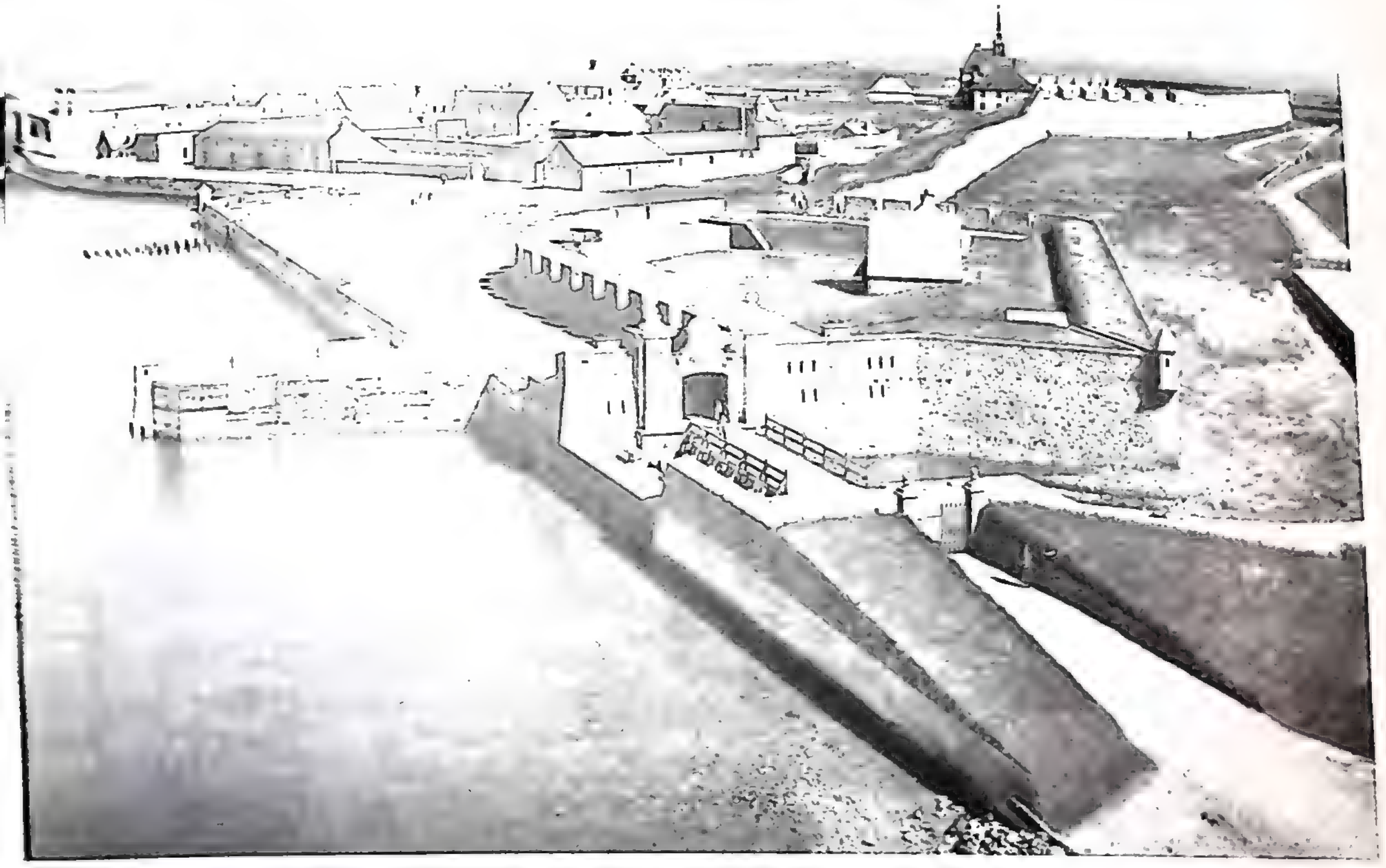
11. Ibid., 37.

12. *Dictionary of Canadian Biography*, III, 1741-1770 (Toronto: University of Toronto Press, 1974), 182. For Chabert's and Dizier's reception in Louisbourg see Chabert, *Voyage Fait Par Ordre Du Roi En 1750 et 1751 . . .*, 44.

13. The population of Louisbourg in 1752 was 4,174 while the total population of Cape Breton Island was 5,845. See J. S. McLennan, *Louisbourg From Its Foundation To Its Fall, 1713-1758* (London: MacMillan & Co. Ltd., 1918), p. 372. For a census of the returning refugees to Louisbourg from July 1749 to June 1750, see France, Paris, Archives Nationales, Archives d'Outre-Mer (hereafter cited as A.N., Outre-Mer), G1, Vol. 466, pièce 76.

14. Chabert, *Voyage Fait Par Ordre Du Roi En 1750 et 1751 . . .*, 44.

home of Jean Marc Séguin, Louisbourg Controller of Marine, but the lack of a suitable building for observations obviously made his mission all the more difficult. Not surprisingly then, by mid-December 1750, Chabert



Fortress of Louisbourg reconstruction. In the upper right-hand corner of the photo can be seen the curtain wall and right flank of the King's Bastion. The Louisbourg Observatory was constructed on the left flank of the King's Bastion.

(Parks Canada Photo.)

wrote to Roland Michel de la Galissonière, his immediate supervisor, describing his frustrating first six months in Louisbourg.[15]

Prior to writing Galissonière, however, the astute Chabert had taken steps to improve his working conditions by insisting that the Louisbourg authorities provide funding to construct a suitable building for his observations. Hence, a half-timbered cabin with a board roof was constructed on the left flank of the King's Bastion probably in November 1750. Chabert vividly described why he required an observatory: 'I have already said,' he noted in his manuscript, 'that I have found in this city no house from which one could conveniently make observations, the intensity of the cold nevertheless would not permit me to work in the open air; I decided on having constructed on the southern flank of the King's Bastion, near which I was lodged, a timber work cabin covered with boards, to serve me as an observatory.'[16] The contractor for the building was Claude Coeuret who was paid the sizable sum of 640 *livres*, 15 *sols* and 4 *deniers* 'for the carpentry, joinery, locksmithing and glaziery which he did for the construction of an observatory placed on the left flank of the King's Bastion, for the use

15. Joseph-Bernard Chabert à Roland Michel de la Galissonière, 122 décembre 1750, cited in Lamontagne, *Chabert De Cogolin Et L'Expedition...*, 14-15.

16. Chabert, *Voyage Fait Par Ordre Du Roi En 1750 et 1751...*, 91.

of the astronomers sent from France to this town.'[17] Crude as it must have been, this small building may well have been Canada's first astronomical observatory. There is no question that 640 *livres* was a substantial amount of money. A private in the Louisbourg garrison, for instance, was paid a gross salary of 108 *livres* per year while a pair of child's leather shoes were valued at 1 *livre* in colonial Louisbourg.[18]

The notion of an observatory in Louisbourg borders on the ludicrous because of the town's notorious reputation for fog. Indiscriminate criticism of Louisbourg's climate, however, is not completely justified for there is very little fog in the town from mid-July until the beginning of the following May. The clearness of the winter sky would be quite suitable for astronomical observations. Nevertheless, the autumn and winter of 1750-1751 must have been particularly foggy, since Chabert lamented that the climate was far from appropriate for astronomical observations. Much to his chagrin, the fog was almost continual, oftentimes the sky being only visible two or three times in a fifteen-day period and then only for a fleeting interval at that.[19] Given Louisbourg's climate, why would anyone possibly want to establish an observatory in the town?

Louisbourg was selected as the principal site for astronomical observations because of its critical geographical location for French Atlantic shipping and its proximity to the Gulf of St. Lawrence, the gateway to Canada's hinterland. In other words, Isle Royale and Louisbourg, in particular, were key reference points for trans-Atlantic navigators. More than anything else, Chabert emphasized this point when he described the purpose of his mission and why he located his headquarters at Louisbourg:

> . . . I had principally to fix with exactitude the longitude of Louisbourg, both in order to facilitate the landing of vessels coming into that port and in order that in the drawing of maps one could start from this point in locating all others on the coasts of this part of North America on their true meridians, which task required an exact determination of this point.
>
> Louisbourg was the place most advantageously located for this purpose; it is the centre of the country in which I had to operate. Thus, supposing that I did not succeed in ensuring each of the extremities in the same way, there was no great error to be feared in concluding them from this fixed point.
>
> Moreover, its proximity to the main entrance of the Gulf of St. Lawrence left no doubt about the position of this entrance, and consequently about the course which vessels going from France to Quebec have to steer. This place may be regarded as its terminus; the remaining navigation in the Gulf and in the river is only coasting, strictly speaking.[20]

Clearly, for French astronomers, surveyors and navigators, Louisbourg was a key reference point for North Atlantic shipping.

Chabert and Diziers did not live in the observatory but stayed in the governor's apartments which were adjacent to the left flank of the King's Bastion.[21] There is no question that Chabert and Diziers detested the Louisbourg winter for they had no fewer than two stoves installed in their quarters.[22] Winter not only brought frigid temperatures but a sense of isolation, at least for recently-arrived Europeans spending their first year in Louisbourg. Referring to the melancholy nature of Louisbourg during the winter, Chabert lamented: 'All types of commerce have disappeared . . . and the town presents only a picture of sadness, much different from the spectacle that the shipping season brings during the summer.'[23]

Chabert and Diziers actually had precious little time for reflecting on the solitude of Louisbourg during the winter for they were preoccupied with their astronomical observations. Official Louisbourg records abound with

17. France. Paris, Archives Nationales, Archives de Colonies (hereafter cited as A.N., Colonies), Bordereaux, 1751, C11C, vol. 13, fol. 147, 15 novembre 1753.

18. In the eighteenth century France's monetary system was based on the *livre* which was divided into *sols* and *derniers*. One *livre* was worth 20 *sols* and one *sol* was worth 12 *derniers*. See Kenneth Donovan, 'Inflation at Louisbourg-1757,' *Canadian Collector*, vol. 18, no. 1 (January-February 1983), 22. A *livre* was the approximate equivalent of an English shilling during the first half of the eighteenth century.

19. Chabert, *Voyage Fait Par Ordre Du Roi En 1750 Et 1751 . . .*, 44-45.

20. Ibid., 89-90.

21. In a recent article R. C. Brooks maintains that Chabert and Diziers lived in the observatory. See R. C. Brooks, 'M. De Chabert and the 1750 Louisbourg Observatory,' *Journal of the Royal Astronomical Society of Canada*, vol. 73, no. 6, 1979, 339. Chabert and Diziers did not live in the observatory but in the governor's apartments next door. See Kenneth Donovan, 'Communities & Families: Family Life and Living Conditions in Eighteenth Century Louisbourg,' *Material History Bulletin*, no. 15 (Ottawa: National Museum of Man, 1982), 42. Brooks also maintains that 'The skies were made accessible for observations by removing planks on the roof.' Brooks, 339. He presumably based the above interpretation on the following description of the observatory: it was 'une cabanne couverte de planches.' Such an interpretation is not justified for while 'couverte de planches' refers to a board roof, it is simply a general construction term used in Louisbourg. Rather than remove nailed boards from the roof each time they wanted to make observations, it is much more likely that Chabert had a section cut out of the roof specifically for observations. The hole in the roof could then be covered with a waterproof hatch.

22. A.N., Colonies, C11B, vol. 29, fol. 278v., 15 novembre 1750, 'Deux Poels de fer posées dans l'appartement du gouvernement ou loge Mr Chabert, Estimé pour fourniture de briques, pour les foyers, terre grasse et façon a six livres.'

23. Chabert, *Voyage Fait Par Ordre Du Roi En 1750 Et 1751 . . .*, 103.

Aerial view of Louisbourg looking towards the northwest. The left flank of the King's Bastion is in the left-hand corner of the photograph.
(Parks Canada Photo.)

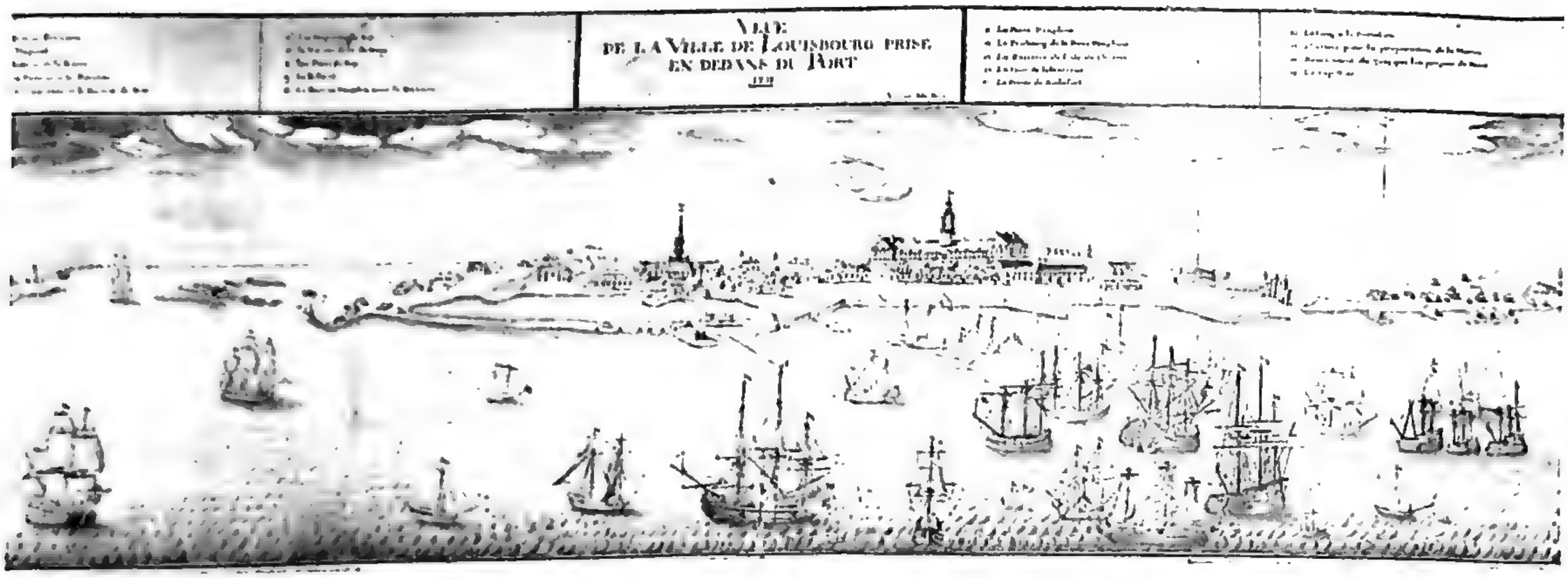
accounts detailing their activities at Louisbourg. In order to supplement their observations at Louisbourg, Chabert and Diziers made four sorties to various parts of Isle Royale and Acadia to determine positions of latitude and longitude. The French authorities budgeted 21,660 *livres* to pay for chartering and equipping a number of vessels for these missions.[24] With such large funds allocated to ensure the success of the scientific project, it is small wonder that entrepreneurs in the fortress town welcomed the astronomers' residence in Louisbourg, for they had a field day reaping hefty profits on numerous goods and services supplied to Chabert. Monsieur Claparede was paid 157 *livres* for providing his vessel for astronomical observations, while Claude Caresmant Rand, a Louisbourg carpenter, was paid 60 *livres* for two tables with drawers 'which he made for the use of Mr. Chabert who was conducting astronomical observations.' Antoine Castaing was paid 3,200 *livres* for renting his vessel *Le Dauphin* for two months and four days but by far the greatest expense involved chartering the schooner of Louis Delort for three months and 22 days at a cost of 10,453 *livres*.[25]

Was Chabert's Louisbourg observatory an astronomical observatory or a survey station? Examples of the latter were not uncommon during much of the eighteenth century in North America. As a general rule, they were temporary structures which existed solely for the purpose of facilitating astronomical observations associated with latitude and longitude determinations.[26] Given the above

24. A.N., Colonies, C11B, vol. 29, fol. 137, Prévost au ministre, 31 octobre 1750.

25. Ibid., C11C, vol. 13, Bordereaux, 1750. For the various payments for services rendered see the following folios: fol. 111, 2 décembre 1750; fol. 111v., 30 décembre 1750; fol. 119; fol. 147, 15 septembre 1751.

26. W. I. Milham, *Early American Observatories: Which was the First Astronomical Observatory in America?* (Williamstown, Mass., Williams College, 1938). Don W. Thomson, *Men and Meridians. The History of Surveying and Mapping in Canada*, vol. 1 (Ottawa: Queen's Printer, 1966). Roy L. Bishop, 'An Eighteenth-Century Nova Scotia Observatory' in *The Journal of the Royal Astronomical Society of Canada*, vol. 71, no. 6 (December 1977).



View of Louisbourg in 1731 by Claude-Etienne Verrier
(France. Paris, Bibliothèque Nationale, Cartes et Plans, GeC, 5019.)

criterion, Louisbourg's astronomical observatory appears to have been a survey station. Admittedly, there was never any doubt as to the primary purpose of Chabert's mission to Isle Royale for as he noted, '. . . I had principally to fix with exactitude the longitude of Louisbourg. . . .'[27]

However, Chabert's voyage to Isle Royale included other objectives, namely: remarks on the temperature of the climate; observations on the tides; and 'diverse operations of practical geometry.' Chabert conducted detailed stellar and lunar observations for all three of the above supplementary objectives.[28] Furthermore, Chabert was not merely attempting to determine the longitude of Louisbourg but he wanted to compare the exactitude of the various methods for determining longitude. (These methods included lunar occultations, eclipses of Jovian satellites, lunar distances, equal altitudes and a lunar eclipse.)

Upon completion of his observations, Chabert left Louisbourg in mid-September 1751 and after his arrival in France he corresponded with numerous European astronomers in an attempt to verify his specific observations of occultations and eclipses of Jovian satellites at Louisbourg with those undertaken at European observatories. Joseph Bradley, the renowned English astronomer and successor to Edmond Halley as Astronomer Royal, sent Chabert an extract of the register of his observations at the Greenwich observatory corresponding to those of Chabert at Louisbourg in the winter of 1750-1751. Chabert also compared his longitudinal findings with those of the following astronomers: Pierre Charles Le Monnier, his former instructor at the Paris observatory; Esprit Pezenas, Jesuit professor of hydrography and director of the Marseilles observatory; P. Vendlingen, Jesuit astronomer at Madrid; Joseph-Jérôme Le Français de la Lande, astronomer at the Hôtel Cluny observatory in Paris; and Jean-Dominique Maraldi, astronomer at Thury, which is near Paris.[29]

Within two years of returning to France and after having completed consultations on the methods and accuracy of his longitudinal determination, the Royal Academy of Sciences published a comprehensive report by Chabert documenting in detail virtually all of his findings at Isle Royale. Entitled *Voyage fait par ordre du Roi en 1750 et 1751,* it was a most sophisticated piece of work and The Royal Academy of Sciences commended Chabert for his contribution to physics. Chabert's research in Isle Royale raises a number of important questions: how many surveyors published a 288-page manuscript describing their observations for a one-year period? Furthermore, if the observatory in Louisbourg was a survey station, was it not unique in North America? After all, how many survey stations were built in populous towns? By 1751 the town and surrounding har-

27. Chabert, *Voyage Fait Par Ordre du Roi en 1750 et 1751 . . .*, 89.

28. Ibid., see 71, 105-08, 163.

29. For the comparison of Chabert's observations with those of the five European astronomers see Chabert, *Voyage Fait par un Ordre Du Roi en 1750 et 1751 . . .*, 217-18, 244, 245-46, 252.

VOYAGE
FAIT PAR ORDRE DU ROI
EN 1750 ET 1751,
DANS L'AME'RIQUE SEPTENTRIONALE,

Pour rectifier les Cartes des Côtes de *L'ACADIE*, de *L'ISLE ROYALE* & de *L'ISLE DE TERRE-NEUVE;* Et pour en fixer les principaux points par des OBSERVATIONS ASTRONOMIQUES.

Par M. DE CHABERT Enſeigne des Vaiſſeaux du Roi, Membre de l'Académie de Marine, de celle de Berlin, & de l'Inſtitut de Bologne.

A PARIS,
DE L'IMPRIMERIE ROYALE.

M. DCCLIII.

Title page of *Voyage Fait Par Ordre Du Roi.*

RELATION
DU VOYAGE
FAIT PAR ORDRE DU ROI,
EN 1750 ET 1751,
SUR LES
CÔTES DE L'AME'RIQUE SEPTENTRIONALE.

IL eſt peu de Pays où il ſût auſſi néceſſaire de faire des Obſervations aſtronomiques, que dans la partie de l'Amérique ſeptentrionale, qui comprend *l'Acadie, l'iſle Royale & l'iſle de Terre-neuve;* il ſuffit, pour s'en convaincre, de jeter les yeux ſur les cartes qui ont été juſqu'à préſent le plus en uſage, & de

A

Chabert and Diziers calculating the time by the method of lunar-solar distances in order to determine longitude at Grand Anse near the Strait of Canso. Inside the astronomer's tent are a globe and a clock and projecting from it is the barrel of a telescope.

bour of Louisbourg had approximately four thousand full-time residents whereas the vast majority of survey stations in North America during the first half of the eighteenth century were hastily erected in wilderness territory.

Finally, there is the critical question of how long was the observatory in use? The observatory was not a temporary structure because it was not demolished after Chabert left Louisbourg for France. On 18 June 1752, nine months after Chabert's departure from the fortress town, Pierre Jérôme Boucher, the engineer in charge of Louisbourg's fortifications and public buildings, sent the construction details for the observatory to Antoine Louis Rouillé, the Minister of the Marine and the sponsor of Chabert's mission to Louisbourg. 'I have also included,' Boucher wrote to the minister, 'the construction details of the small half-timber building serving as an observatory, which has been constructed on the left flank of the King's Bastion at the request of Mr. Chabert.'[30] A resident of Louisbourg since 1717, Boucher was a competent cartographer and draftsman and the author of numerous excellent maps of Isle Royale. Boucher died in 1753 and the subsequent inventory of his estate included, among other things, mathematical instruments, five volumes on the elements of Euclid, a sundial and a valuable semicircle. The latter instrument, designed for

30. A.N., Colonies, C11B, vol. 32, fol. 259v., Boucher à Rouillé, Louisbourg, 18 juin 1752.

measuring angles, was sold to Claude Coeuret, the contractor who constructed the observatory.[31]

There is little doubt that a man of Boucher's educational background and expertise in surveying and mapmaking would have used the observatory after Chabert had returned to France. Certainly, the Minister of the Marine was more than pleased with Boucher's reports and the completed work on the king's buildings, including the Louisbourg observatory. Replying to Boucher's memorandum describing the Louisbourg observatory, Rouillé remarked in July 1752:

> I have received sir, with your letter of the 18 of last month the statements of the expenses which have been made to the King's buildings at Louisbourg during the last year, those of Port Toulouse and Isle St. Jean during the years 1749, 50, and 1751 and the construction details of the small half-timber building serving for observation.[32]

While France's Minister of the Marine was kept informed regarding Louisbourg's astronomical observatory, there were numerous officials and private citizens in Louisbourg who shared his concern and appreciation for astronomical observations. Indeed, judging by the avid interest in astronomy at Louisbourg, it is more than likely that the observatory continued to be utilized throughout the 1750's. Stellar observations, of course, comprised a vital part of the curriculum for navigation training and there had been a navigation school established in Louisbourg at least since the mid-1730's. Students paid tuition at the school and were required to provide their own instruments.[33] Pierre Morpain, Louisbourg's port captain, was one of the navigation instructors.[34] Another likely instructor was Jean René Cruchon de La Tour, a geographer and master hydrographer. A native of St. Malo, La Tour had been a resident of Louisbourg since the mid-1720's.[35] La Tour has left detailed journals recounting two official missions which he had undertaken to chart the harbours and coastline near Scatary Island. Accompanied by Pierre Morpain, who commanded the vessels on both occasions, La Tour conducted numerous astronomical observations in September 1735 and August 1737. Since he was continually determining positions of latitude and longitude, La Tour's instruments included telescopes of various sizes as well as a finely tuned clock for calculating longitude.[36]

Cruchon had a large house in Block 34, Lot D of the town. His next door neighbour in Lot C was François Vallée, the king's surveyor and self-described 'professor of mathematics.'[37] In view of Vallée's profession as surveyor, he was probably keenly interested in astronomy as well. Interest in astronomy at Louisbourg, however, was by no means confined to surveyors, navigators, geographers or hydrographers, for there were a number of Louisbourg citizens from diverse occupations and backgrounds who owned telescopes. Equally, if not more significant, these telescopes were not simple pocket-type instruments but were fairly sophisticated astronomical telescopes whose value, despite being used, was in the neighbourhood of 20 *livres* each.[38] During Louisbourg's first occupation 1713-1745, 20 *livres* was the equivalent of six months' salary for a full-time domestic servant.

The owners of telescopes in Louisbourg included Elie Tesson De La Floury, an enterprising fishing proprietor who lived on the north shore outside the town's main gates.[39] Governor Jean-Baptiste-Louis Le Prévost Duquesnel, who died at Louisbourg in 1744, had a telescope valued at 18 *livres*.[40] Michel DeGannes, a captain in

31. A.N., Outre-Mer, G2, vol. 202, dossier 287, Vente de plusieurs meubles de feu Pierre Jérôme Boucher, 20 septembre 1753. Coeuret paid 27 *livres*, 10 *sols* for Boucher's 'demi Cercle.' For a biography of Boucher see *D.C.B.*, vol. 111, 1974, 79-80.

32. A.N., Colonies, B, vol. 95, fol. 314, Rouillé à Boucher, Compiegne, 25 juillet 1752.

33. A.N., Outre-Mer, G2, vol. 185, no. 83. On 21 September 1735 Jean Perré paid his brother Antoine's tuition of 21 *livres* 'pour son Ecolle.' In 1736 Antoine Perré owed his brother-in-law 682 *livres* 'pour fournitures de hardes, instruements de Navigation & nourriture que le Sr benoist luy a fourni Suivt son compte quittance.'

34. *D.C.B.*, III, 1974, 475.

35. See A.N., Outre-Mer, G2, vol. 185, fols. 65-74, Inventaire de La Communaute de feu Sr René Cruchon la Tour, 13 aoust 1738.

36. A.N., Archives de la Marine, C7, Dossiers Personnels, 221, Pierre Morpain, Captaine de port à l'Ile Royale 1716-1744. Etat des Services. 'Journal fait par moy Latour Cruchon dans Le bateau Le deligent commandé par Monsieur morpain capitaine du port de L'isle Royale à L'ocasion des recherches des dangers que L on dit estre par des faut sonds et basses Sous L'Eau aux environ de L'isle de Scatary aux alterages de L'isle Royale.' 6 septembre 1735, n.p.

37. For the location of Vallée's residence see A.N., Outre-Mer, G3, 2038-2, no. 21, 20 aoust 1733.

38. I have examined the inventories of estates of 120 individuals at Louisbourg for telescopes. The owners of small or pocket-type telescopes included Jean Grenard dit Belair, the lighthouse keeper, who died in 1745. See A.N., Outre-Mer, G2, vol. 199, dossier 198, 1745. Belair had 'une petite longue vue' valued at 2 *livres* 10 *sols*.

Jean Pierre Daccarrette, a Louisbourg negoçiant who also died in 1745, had a pocket telescope. See ibid., G2, vol. 200, dossier 202, 1745. Daccarrette had 'une lunette du proche de poche' valued at 3 *livres*.

La Riviere Mervin, a ship captain who died in Louisbourg in 1744, had 'une petitte Longue vue garnie de cuivre,' which was sold for 30 *sols*. Included among Mervin's possessions was a book entitled 'Traitté complet de la navigation' and marine maps. See ibid., G2, vol. 199, dossier 192. Papiers concernant la succession de feu Sieur La Riviere Mervin, 23 aoust 1744.

39. A.N., Outre-Mer, G2, vol. 197, dossier 143, Inventaire des biens de la communauté de feu Thesson Lafloury Et Simone Millou sa femme, 1741.

40. Ibid., vol. 199, dossier 189, Inventaire des biens de Sr Duquesnel, 22 octobre 1744.

Louisbourg's garrison and longtime resident in the town, possessed a telescope valued at 18 *livres*.[41] Julien Fizel, a prosperous Louisbourg innkeeper and merchant, conducted his stellar observations 'with an English telescope.'[42]

In view of the number of Louisbourg citizens who were proprietors of telescopes, it is hardly surprising that after Chabert's departure from Louisbourg in 1751 the town remained a centre for astronomical observations. Louisbourg astronomers, following the example of Chabert and Diziers, doubtless brought their telescopes and other instruments to the observatory to conduct their investigations.

Louisbourg chief engineer, Louis Franquet, must have been a frequent visitor to the observatory. Franquet, who had accompanied Chabert to Louisbourg in 1750, came to Isle Royale in order to examine the defences of the colony and recommend the necessary construction work to prepare the colony against attack. Although appointed an army brigadier and director of fortifications for all of New France in 1753, Franquet is best remembered for his detailed reports of his journeys throughout Isle Royale and Isle St. Jean in 1751 and his visit to Canada (present-day Quebec) in 1752 and 1753. With the exception of a brief interval in France, Franquet remained in Louisbourg until the capitulation of the fortress in 1758. His numerous detailed maps and plans of Louisbourg and environs are testimony to his skill as a cartographer and geographer.[43]

Besides Franquet and his assistant Pierre Jérôme Boucher there were three recently-arrived king's surveyors in Louisbourg during the early 1750's who were also interested in cartography and the consequent requisite astronomical observations. The three king's surveyors were messieurs Chalton and Roche and Joseph De La Roque. The latter was not simply a surveyor for he conducted one of the most detailed censuses of Isle Royale and Isle St. Jean during the French regime, together with an exacting geographical description of practically all of the populated areas of the two islands.[44] Prior to embarking on his journey throughout Isle Royale, La Roque stayed in Louisbourg and received considerable training in engineering from Louis Franquet.[45] With the facilities already established, it is quite likely that Franquet taught La Roque how to conduct basic astronomical observations at the Louisbourg observatory.

Upon completion of his census and description of Isle Royale and Isle St. Jean, De La Roque returned to Paris in 1752. Three years later François-Claude Victor Grillot De Poilly, an army officer and military engineer, was appointed Franquet's assistant and assigned the task of directing the reconstruction and repair of Louisbourg's fortifications and public buildings.[46] Poilly, who kept a diary from New Year's Day 1758 until the capitulation of the fortress in July, conducted detailed astronomical observations in Louisbourg, using the telescope of Jacques Prevost, Louisbourg's commissaire-ordonnateur. Describing the astronomical observations Poilly stated on 7 March 1758:

> I observed the planet which had been taken for a comet; it was Venus. With Monsieur Prevost's telescope I [saw] that it was about halfway through its waxing. The sun disappearing, I saw it as 6:15; it was then at an angle of 22½ degrees to the horizon; at 8:28 it disappeared, being at an angle of 6 degrees to the horizon.[47]

The astronomical investigations of Poilly and most of his contemporaries at Louisbourg were not simply those of private citizens for men like Franquet, Boucher, Morpain, La Tour, La Roque, and Vallée, to name but a few, carried out astronomical observations as part of their official duties. Furthermore, Louisbourg governors such as Duquesnel, Desherbiers and Raymond not only gave official sanction to various scientific projects but the first two actively participated in astronomical observations. Thus, while the Marquis de Chabert was unquestionably the best known and most competent astronomer to visit Louisbourg, he was certainly not the only one. Given such diligent scientific activity and general interest in astronomy at Louisbourg, it is understandable that the astronomers at the French Royal Academy of Sciences recognized the significance of Louisbourg as a centre for astronomical observations in New France.

By autumn 1752 the astronomers at the Royal Acad-

41. Ibid., vol. 201, dossier 254, pièce 2, Inventaire des meubles de la succession de Michel De Gannes de Falaise, 31 octobre 1752.

42. Ibid., vol. 209, dossier 508, L'inventaire des effets et meubles de feu Julien Fizel, 3 aoust 1757.

43. *D.C.B.*, III, 228-31.

44. For De La Roque's census see *Report Concerning Canadian Archives for the Year 1905*, II (Ottawa: S. E. Dawson, 1906), 'Tour of Inspection made By the Sieur De La Roque,' 4-152. See also Christian Pouyez, 'La population de l'Ile Royale en 1752,' *Histoire Sociale*, vol. VI, no. 12, November 1973, 147-80.

45. A.N., Colonies, C11B, vol. 32, Compte de Raymond au ministre de la Marine, fols. 92-95, Louisbourg, 5 décembre 1752.

46. *D.C.B.*, III, 267.

47. France. Paris, Archives de la Guerre, Bibliothèque du Comité Technique du Genie, Manuscript 66, Journal de Poilly. 'Memoire des Evenemens qui interesseront cette Colonie Pendant L'année 1758 par Guillot de Poilly,' 13.

emy of Sciences, much to their sorrow, realized that it was too late for one of their astronomers to reach New France in order to observe the passage of Mercury upon the sun, which was to take place the following spring. Hence in October 1752 the renowned French astronomer Joseph Nicholas Delisle, geographical astronomer to the naval department and founder of the observatory at the Hôtel Cluny, sent a memorial to the Jesuit priest, Joseph-Pierre de Bonnécamps, a teacher of hydrography and mathematics at the Jesuit college in Quebec City. Delisle, the founder of an astronomical school and observatory at St. Petersburg for the Empress Catherine of Russia, and the author of a method of observing the transits of Venus and Mercury, sent instructions to Bonnécamps outlining the procedure to be followed for the observation of the passage of Mercury upon the sun which was to take place in New France on 6 May 1753.[48]

Since it was impossible for Delisle's instructions to reach Bonnécamps in time by way of the French colonies up the frozen St. Lawrence River, the memorial was sent to the governor of New York. Eventually dispatched overland to Quebec, the memorial was also translated and sent to Benjamin Franklin who subsequently published fifty copies of the instructions in a four-page leaflet. Excerpts from the leaflet were printed in the *Boston Newsletter*, 28 March, and the *Pennsylvania Gazette*, 5 April, in the hope that the papers would reach astronomers in Halifax and Newfoundland so that they could conduct the observation according to Delisle's instructions.[49]

In a letter to James Bowdoin, a prosperous Boston merchant interested in astronomy and physics, Franklin explained the necessity of preparing for the observation of the transit of Mercury:

> The enclos'd is a Copy of a Letter and some Papers I received lately from a Friend, of which I have struck off Fifty Copies by the Press, to distribute among my ingenious Acquaintance in No. America, hoping some of them will make the Observations proposed. The Improvement of Geography and Astronomy is the common Concern of all polite Nations, and I trust our Country will not miss the Opportunity of Sharing in the Honour to be got on this Occasion. The French Originals are dispatch'd by Express over Land to Quebeck: I doubt not but you will do what may lie in your Power, to promote the Making these Observations in New England, and that we may not be excell'd by the American French, either in Diligence or Accuracy.[50]

With the assistance of Delisle, the 'American French' were well prepared to excel Franklin and his contemporaries. At the end of his memorial Delisle emphasized:

> This observation might be made in a place as exactly as possible to the longitude of Paris, that these observations may be used for finding the Sun's parallax. Wherefore, in whatever place the person be who shall make these observations, in Canada, be it at Quebec, or elsewhere in the inward Parts of the Country, they will not fail to be useful to Astronomy and Geography, but it is to be remark'd, that if the Observation be made too far in the Country, as at the Lake Superieur, & c it is to be feared that the Emersion of Mercury out of the Sun, may happen too near the horizon, or even before the Sun is risen, for which Reason the most advantageous Place of all that Country would be Louisbourg, whose longitude hath been most exactly determined by Mr Chabert; but for want of that, it may be done at Quebeck, or at Montreal.[51]

Thus, more than a year after Chabert had left Louisbourg, Joseph Nicolas Delisle, one of France's most respected astronomers, recognized the critical importance of Louisbourg as a centre for astronomical observations in New France. As a further example of Delisle's interest in Louisbourg, *L'Encyclopédie, ou Dictionnaire Raisonne Des Sciences, Des Arts Et Des Metiers* cited Delisle as the source for Louisbourg's longitude reading of $4^h 8' 27''$ in 1751.[52]

Delisle's memorial, to say nothing of the intense concern of Louisbourg officials and private citizens in as-

48. *Journal Des Scavans*, avril 1753, 219; *Larousse Du XXe Siècle* (Paris: Librairie Larousse, 1929), 746; *Dictionnaire Encyclopédique Quillet* (Paris: Librairie Aristide Quillet, 1962), 1564.

For a biography of Bonnécamps, see *D.C.B.*, IV, 1979, 76-77.

49. *The Boston Newsletter*, Boston, 28 March 1753; *The Pennsylvania Gazette, Philadelphia*, 5 April 1753.

50. Benjamin Franklin to James Bowdoin, Philadelphia, 28 February 1753, in Leonard W. Labaree, ed., *The Papers of Benjamin Franklin*, IV (New Haven: Yale University Press, 1961), 446. For a facsimile of Delisle's memorial published by Franklin, see I. Bernard Cohen 'Benjamin Franklin and The Transit of Mercury' *Proceedings of the American Philosophical Society*, vol. 94, no. 3 (June 1950), 222-32.

51. *The Boston Newsletter, Boston*, 28 March 1753.

Delisle's memorial was subsequently published in 1753. M. De L'isle *Advertissement aux Astronomes Sur Le Passage de Mercure au devant du Soleil qui doit arriver le 6 May 1753 avec une mappemonde où l'on voit les nouvelles décovertes faites au Nord de la mer du Sud, & sur laquelle on a distingué par différens cercles tous les lieux de la terre qui doivent voir ce célébre passage, & l'on y marqué les momens où cela doit arriver dans chaque lieu, d'une manière qui n'a point encore été exécutée jusqu'a present* (Paris: chez David le Pere, Quay des Augustins, 1753), 30 pp. For a detailed review of Delisle's memorial see *Journal des Scavans*, 219-24, avril, 1753.

52. *Encyclopédie, ou Dictionnaire Raisonne Des Sciences, Des Arts Et Des Metiers*, IX (Neufchastel: Chez Samuel Faulche & Compagnie, 1765), 700. 'La long. de Louisbourg, à l'égard de Paris est 4h 8′ 27″ selon M. Delise, dans les mémoires de l'Académie des Sciences, Ann. 1751.'

tronomy, demonstrates most conclusively that astronomical observations at Louisbourg were not transitory in nature. The plans for the Louisbourg observatory have not yet been discovered, if indeed they are extant. However, it is most unlikely that the observatory was dismantled for it was a public building and the expenditure for its destruction would doubtless have been recorded in Louisbourg's detailed list of public expenditures. The Marquis de Chabert recorded observations on the stars and the moon, as well as the tides and the climate. Besides calculating the exact longitude of Louisbourg, he also compared the results and accuracy of various methods of determining longitude. Chabert was a trained scientist with an inquiring mind who engaged in a wide variety of scientific investigations while at Louisbourg. His longitudinal readings and accurate marine maps had a profound effect on navigation along the northeast Atlantic coast of North America throughout the latter half of the eighteenth and well into the nineteenth century.

Kenneth Donovan is an historian at Fortress Louisbourg National Historic Park, lecturer in history at the University College of Cape Breton, and President of the Old Sydney Historical Society. He has published widely in scholarly and popular journals throughout the United States and Canada.

Some Important Maritime Meetings September 1984 to June 1985

September 1-7, 1984 — International Congress of Maritime Museums meeting at Hamburg, Bremerhaven and Lubeck.

October 8-12, 1984 — Fifth International Reunion of Nautic and Hidography meeting at Rio de Janeiro, R.J. Brazil. Most papers will deal with maritime themes, 1780-1880. Inquiries should be addressed to Captain Max Justo Guedes, Servico de Documentacao Geral de Marina, Rua Dom Manúel 15, Centro 20010, Rio de Janeiro, R.J. Brazil.

October 20-21, 1984 — Symposium on Whaling meeting at the Kendall Whaling Museum, Sharon, MA. Papers will stress an interdisciplinary, international approach to whaling. Inquiries should be addressed to Stuart Frank, Kendall Whaling Museum, Sharon, MA 02067.

October 20, 1984 — 'America's Steamboats: The Remaining Few.' Inquiries should be addressed to Donald Nath, President, The Great Lakes Historical Society, Vermilion, Ohio 44089.

November 2-3, 1984 — Maritime History Symposium at Mystic Seaport, Mystic, Connecticut. Papers will deal with Southern New England Maritime History. Inquiries should be addressed to Curatorial Department, Mystic Seaport, Mystic, Connecticut 06355.

January 9-13, 1985 — Conference on Underwater Archaeology at Park Plaza Hotel, Boston, MA. Papers will deal with aspects of Underwater Archaeology. Inquiries should be addressed to Paul F. Johnston, Peabody Museum, East India Square, Salem, MA 01970.

April 24-26, 1985 — North American Society of Oceanic History Symposium on the American Discovery of the Indian Ocean and the Pacific 1785-1885. Inquiries should be addressed to Archibald R. Lewis, Program Chairman, Peabody Museum of Salem, East India Square, Salem, MA 01970.

May 3-5, 1985 — Maine Maritime Museum's Symposium on American Maritime History. Inquiries should be addressed to John S. Carter, Maine Maritime Museum, Bath, Maine 04530.

Book Reviews

PAUL E. SHANABROOK, *The Boston (A History of the Boston Yacht Club), 1866-1979* (Boston: The Boston Yacht Club, 1979). Cloth, 272 pages, photographs, appendices.

Yachting is probably the most important maritime enterprise in the United States and the world beyond our shores. More funds are expended in its pursuit than are used in moving the world's oil in great tankers along the seaways, or in exploiting the fisheries in ocean waters. Its impact on our coastal seas and in the Great Lakes is undeniable, yet its history has been relatively neglected by maritime historians. True, we do find a few excellent studies of yacht designs, several which deal with the America's Cup, and a number of inadequate popularizations of yachting as a sport. There is even some analysis of yachts and their importance in William Baker's section of *New England and the Sea* (Mystic, Conn., 1982, pp. 215-25, 272-76). Two small yachting museums exist; one is the Herreshoff Marine Museum located in Bristol, Rhode Island and a second, newer one is found in nearby Newport. Both the Hart Nautical Museum at MIT and Mystic Seaport have shown some interest in yachting craft and their construction, but in comparison with other maritime subjects, yachting remains something of an orphan child from an historical or scholarly point of view.

When one examines the state of yachting in the 1980's the broad outline is somewhat as follows. Yachting tends to be a seasonal activity but it is also one that takes on a regional pattern. Today some nine *major* regional yachting areas have taken shape in the United States. One extends from Cape Cod to the Canadian Maritimes and centers in Boston. Nearby is a second one which consists of an area which stretches from New York City along Long Island Sound to Martha's Vineyard and Nantucket. A third is formed by Chesapeake Bay. A fourth is found in Florida, consisting of both its east coast and its west coast. A fifth is formed by Texas Gulf shores from Port Arthur to Brownsville. A sixth consists of waters just off Southern California between San Diego and Santa Barbara. A seventh comprises the Bay area farther north and nearby Monterey. And a third and last Pacific yachting region is formed by Puget Sound and Canadian inland waters around Victoria and Vancouver. Last, but not least, we have a major yachting area found along the American and Canadian shores of the Great Lakes.

Each of these regions has at least one center which economically and socially epitomizes the yachting interests of its area. For the Massachusetts Bay region it is Marblehead. For the Long Island Sound area it is Newport. For the Chesapeake it is Annapolis. For Florida it is Fort Lauderdale on the east coast and Sarasota on the west coast. For the Texas Gulf coast it is Galveston. For Southern California it is San Diego and Newport Beach. For the Bay area, Sausalito. For the Puget Sound-Vancouver complex it is Seattle, with Victoria as a subcenter. For the Great Lakes it is Mackinac Island.

On the Atlantic side of North America, regional yachting areas since 1914 have come to be linked together by the Cape Cod Canal and a series of protected passages which form the intercoastal waterway system and avoid dangerous shoals on the ocean side of Cape Cod and Cape Hatteras. No such linkage, however, is possible along Pacific shores. But on both coasts yachting activities at times extend out into the more open sea to Halifax, Bermuda and the Caribbean and the Gulf of Mexico on the Atlantic side and to Hawaii, the west coast of Central America and Peru and even South Sea Islands areas such as Tahiti in the Pacific.

It is also worth noting that North American yachting has its European counterparts in the Mediterranean as well as along the Atlantic shores of Iberia and France and in the narrow seas that surround the British Isles, Scandinavia and Baltic shores. Western European yachting regions at times tend to extend out into the Atlantic as far as the Faroes and Iceland in the north and the Azores, Madeira and Cape Verde Islands to the south.

Finally, today there exist three other more isolated yachting areas, all of which are south of the Equator. One lies along the coasts of South Africa from Capetown to Durban. A second centers in the La Plata area of South America. The third, which is the most important, as we Americans recently learned, consists of the Australian subcontinent and New Zealand.

Ever since the time of Capt. Joshua Slocum, or even earlier, true oceanic sailing has begun to link together the world's yachting areas. This process speeded up when Morison tracked Columbus' route across the mid-Atlantic and intrepid sailors like Chichester and Philip Weld dramatized the joys and perils of deep-water sailing . It

has also been reinforced by the activities of square-rigger skippers like Alan Villiers and a host of other captains of the Tall Ships. By 1984, the millions of yachtsmen and yachts in the world have been drawn together into an even closer network of relationships in which only the people of India, East Asia, and the Third and Communist worlds do not share. All of this has happened without a real awareness of its importance reaching the consciousness of modern maritime historians, even though four fine publications, *Yachting, Sail, Cruising* and *Wooden Boat* catalogue the present state of yachting on a regular basis.

Granted that this is true, there remains the serious problem of how we can approach all of this to explain how and why it happened. One way to do so is to probe into that institution which has been most active in fostering global yachting—at least before the post-World War II proliferations of marinas. I refer, of course, to the yacht club. We need, therefore, to examine histories of yacht clubs in America and beyond, in the hope of finding some clues to guide understanding of the processes at work. When we seek such histories, however, we find at once that our search is thwarted by their scarcity, at least in any usable form. For instance, John Parkinson, Jr.'s 1975 two-volume history of the New York Yacht Club, perhaps the nation's oldest and most prestigious, is filled with facts, but is relatively unreadable. All the more reason we should welcome Paul A. Shanabrook's volume *The Boston,* which was privately printed by the Boston Yacht Club in 1979. This volume, despite its faults, tells the story of New England's oldest yacht club between its foundation in 1866 and 1979. It is what the serious maritime historian can learn from this precious historical record of the history of yachting that will concern us for the remainder of this review article.

We might best begin by considering one appendix in this volume, which lists the names and home addresses of the more than six thousand members of the Boston Yacht Club since its foundation in 1866. We discover at once the regional basis of American yachting, since over 98 percent of the Boston's members come from communities that form the hinterlands of Massachusetts Bay and the coast of Maine. The others represent a scattering of members who come from Nova Scotia, areas of Rhode Island, and Long Island Sound, as well as from Florida and the Middle West.

Another appendix provides us with a graph which shows that the club's total membership has fluctuated considerably over the more than one hundred years of its existence. It started with about two hundred members until around 1900 when it began to grow rapidly until 1910. Just before World War I, when it had expanded to include some six stations or sub-yacht clubs stretching from Hull to Maine, its membership reached about eight hundred. It fell back to about four hundred members until the late 1950's, when it rose again to reach about seven hundred and fifty members during the period when it abandoned its sub-yacht stations and moved its headquarters to Marblehead as its Boston Rowe Street clubhouse ceased to exist. Then it declined in membership until in 1979 about five hundred were on its roster. Based on this data we can see that yacht club membership historically has been anything but stable, though the reasons for the instability have not yet been fully explained.

In addition, this volume explains how and when yacht clubs managed to find places for those who were wedded to their power boats and allowed them to become part of the yachting establishment. Apparently it was a group of Boston yachtsmen headed by Roger Upton who in 1912 founded the Power Boat Squadron and by 1913 managed to achieve full acceptance by other club members. They also spread their movement to some three score other yacht clubs throughout the land. In this way, the Boston Yacht Club helped make the future world safe for John Macdonald's Travis McGee and his ilk.

Let us turn now to the matter of the America's Cup and its defense, which for more than a century had so much to do with increasing the popularity of yachting in this country and overseas. Probably no yacht club except the Eastern was more involved than the Boston in keeping this trophy in this country. It not only provided a number of winning skippers like Charles Francis Adams, but also was the maritime home of the majority of the yacht designers who constructed successful cup defenders. This began with Edward Burgess who designed *Puritan, Mayflower* and *Volunteer* in 1885, 1886 and 1887 and continued with the even more remarkable Nathaniel Herreshoff, who designed six successful cup defenders between 1893 and 1920. This tradition was carried on by Edward Burgess' son, W. Stanley Burgess, who designed three successful defenders between 1930 and 1937 and by Ted Hood, who since 1958 down to the present day has provided the latest in sails to a whole series of American challengers and defenders. These designers' work has not only been responsible for important changes in hulls, masts and sails of the cup defenders themselves, but over the years has been responsible for changes in yachts of every size and shape. One can draw the conclusion from information derived from this volume that without the Boston Yacht Club, yachts in America and

elsewhere around the world would not have developed as they have.

Finally, we need to consider the matter of the use of fiberglass in yacht construction. The man who seems to have been chiefly responsible for this innovation was Carl Allberg, a Scandinavian designer who in 1959 turned out the first economically feasible fiberglass hull and who since 1964 has been an honored member of the Boston. Though the democratization of yachting which is so apparent today probably began immediately after World War II, there can be little doubt that the use of fiberglass in yacht construction immensely accelerated this process by producing craft which needed a minimum of maintenance and lasted for years. It also revolutionized yachting in tropical waters since fiberglass bottoms resist fouling to which other materials are subject. Without fiberglass construction the boom in cruising in tropical seas would never have taken place.

Turning from the matter of yacht designs and construction to the matter of long-distance racing, what can this volume tell us about this element in yachting history? We learn that in 1905 the Boston joined the Eastern Yacht Club in sponsoring the first long-distance ocean yacht race—from Marblehead to Halifax—which became a regular event in the 1930's. This predated the Bermuda race which began a year later and the California-Hawaii races which started shortly afterward. And in passing it is worth noting that although no woman held any club office at the Boston down to 1979, it was the first yacht club to encourage women skippers to hold their own racing competition among themselves.

It is, of course, worthwhile emphasizing that much that has influenced the spread and growth of yachting in the United States and the world is not to be found in this slender volume. We badly need well-researched and well-written up-to-date histories of other important yacht clubs like Marblehead's Eastern or Long Island's Seawanhaka or others in the various yachting regions of the country and abroad to supplement what Shanabrook's volume has explained for us. Only then can the history of yachting become clear and its vital maritime role obvious.

But we also need other approaches to this fascinating subject. We would welcome careful studies which stress the economics of yachting both from the standpoint of boatyards, marinas and manufacturing firms and yachting's impact upon maritime communities here and abroad. We also need to study and understand yachting as a social activity from the time when George Crowninshield's *Cleopatra's Barge* was built in 1816 as the first American deep-water yacht to the latest America's Cup defender in 1983. Only then can we feel, as maritime historians, that we have come to understand the importance of this special maritime enterprise on the American and world scene. Until then, however, let us salute Shanabrook's *The Boston* and hope that it has a raft of imitators.

ARCHIBALD R. LEWIS

Marblehead, Massachusetts

HENRY A. SCHEEL, *15 Modern Yacht Designs* (Camden, Maine: International Marine Publishing Company, 1983). 12″ x 18″, 112 pages, heavy paper, 42 illustrations. $32.50.

Henry Scheel, the sage of Rockland, Maine, has been stimulating yachtsmen's minds for fifty years with designs that combine the best of the past with the advantages of the newest in materials and technique.

Wisely, International Marine has chosen his work to launch a new experiment in boat-book publishing—'a series of portfolios that will focus on yacht design as a functional art form . . . drawing the eye and inviting long attention.' Recognizing that this experience diminishes as the drawing is reduced to normal book dimensions, here the design pages have been printed on one side only, in a lavish 12″ x 18″ format. They are bound so that they can easily be removed for framing or wall mounting without destroying the book.

One can imagine a fledgling yacht designer pulling out all forty-two sheets to pin them as a frieze to the cork-board walls of his den. He would find there, in the clear outboard and inboard profiles and the lines-drawings, inspiration for solutions ranging from a sixteen-foot day-sailer to a corporate ketch. The thumbnail essay to accompany the latter reveals the gentle wit and wisdom that enliven the printed matter throughout:

'The requirements were vague, so I pretended to be a Brazilian corporate executive and decided I would like to have a boat that could take me in some comfort from Brazil to the Mediterranean, where all executives of big pipe companies should go. On this journey of 4,000 miles we ought to average about 10 knots. We ought to be able to sail, and we ought to have a fine, seaworthy sort of a boat. This 143-foot ketch is the result.

'Now, it isn't everybody who is going to have 10 people living in glory in their yacht, nor is it everybody who's going to have 10 people in their crew, but this vessel would accommodate such a crowd. Being quite unfamiliar with today's shipboard customs in the Mediterranean, I was delighted to be able to have a couple of

hours with the captain of just such a vessel in order to make sure the whole design wasn't absolutely crazy.'

The captain told him: '". . . bear in mind the owner is king. He is absolutely head chap aboard the vessel. His accommodations clearly have to be more grand than those of his guests. . . ."'

In the prefatory 'Life and Times,' Scheel describes his design philosophy: 'If you are going to be a designer of boats, you have to use boats, and if you're going to be a good designer you have to use boats a lot, so that you know what boats have to put up with.' He began his education as crew in the Fastnet Races of 1930 and 1931, a year when his yacht lost a man overboard and the remaining hands had to be rescued by a fishing trawler. Scheel hasn't stopped learning since.

He believes in the value of model-testing but spares his clients the $5,000-a-day rate charged at tanks like that of Stevens Institute of Technology in Hoboken, New Jersey. He feels it's often accurate enough for the purpose, such as with the three possible hull shapes of a twenty-five-foot daysailer, to use fifty-inch, radio-controlled models in a swimming pool. There he can critically observe that which he deems so important, 'the manner in which the water leaves the underside of the hull as the vessel proceeds through the water.'

Of the fifteen designs, seven are cutter-rigged indicating his predilection for this common-sensible division of sail area. Big genoas may make good rule-beaters but, in a view which I share, their improvement of performance may not match their inconveniences. The cutters range in size from the thirty-foot double-ender to the forty-four-footer he designed for Gale Richmond, a happy client ready to trade up from a daysailer to a live-aboard affair two could easily handle. Both boats got their stability from the Scheel Keel, a shape that 'allows a sailboat with moderate draft to get along to windward just as well as if she drew more water.'

Yes, Henry Scheel is a versatile, open-minded, eternally youthful solver of the problems of those who enjoy messing about in civilized boats.

PHILIP S. WELD

Gloucester, Massachusetts

DAVID F. LONG, *Sailor-Diplomat: A Biography of Commodore James Biddle, 1783-1848* (Boston: Northeastern University Press, 1983). 6¼″ x 9¼″, cloth, xvi + 312 pages, illustrated, prologue, appendix, notes, index.

Too long neglected by naval historians, James Biddle emerges in the pages of *Sailor-Diplomat* as a major figure in the story of the United States Navy during its formative years. Scion of a socially prominent Philadelphia family, James commenced his career in 1800 when he was commissioned a midshipman and saw service on *President,* a frigate under the command of Capt. Thomas Truxton. It was the start of a lifelong attachment to the Navy.

Family wealth and social standing combined with intelligence and recognizable leadership characteristics led to Biddle's rapid advancement. By 1815, he achieved the highest official service grade, and from 1815 to 1845 he was either captain or commodore in eight American warships. Nonetheless, he was overshadowed by his more famous brother, Nicholas, of 'Andulusia' and second Bank of the United States fame, as well as by such naval luminaries as Stephen Decatur, William Bainbridge, and, though not quite a contemporary, Samuel du Pont.

As a young midshipman, James Biddle saw service during the Tripolitan War, first on *Constellation* and then on *Philadelphia.* It was while serving on the latter that Biddle with the frigate's entire crew was taken prisoner by the bashaw of Tripoli—an imprisonment that lasted nineteen months.

During the War of 1812, Biddle distinguished himself as first lieutenant to Commander Jacob Jones on *Wasp* and then as commander on *Hornet* from 1813 to 1815. As a result of the well-known encounter on 23 March 1815 between *Hornet* and HMS *Penguin,* Congress awarded Biddle a gold medal, despite the fact that the Anglo-American war had ended officially with the signing of the Treaty of Ghent on 24 December 1814. Biddle sustained a serious neck injury at the time which he characteristically shrugged off but which also served as the basis for an unsuccessful pension application.

It was as an officer-diplomat that James Biddle is best remembered. Between 1817 and 1818, he negotiated with both Spanish loyalists and Latin American rebels in Chile and Peru during the independence movement in South America, and he was respected by both sides for his even-handed approach. He was involved a few years later in a somewhat bizarre plan to promote Cuban independence from Spain and United States annexation that was unsuccessful. Between 1829 and 1830, Biddle played an instrumental albeit secondary role in assisting Charles Rhind in the negotiation of America's first commercial treaty with the Ottoman Empire. He would conclude his career in the mid-1840's as commander of the East India Squadron by exchanging ratifications of the Treaty of Wanghia with the Chinese in December 1845

and establishing a United States legation at Canton and a consulate at Shanghai early the following year.

David Long in *Sailor-Diplomat* offers his readers a well-balanced portrait of James Biddle, based on family papers, published reminiscences such as Daniel Ammen's useful *The Old Navy and the New,* and official Navy department records. Biddle is seen as a cold, self-centered, cantankerous individual in terms of his personal relationships. In his early career as a naval officer, he was a strict disciplinarian (though subsequently as head of the Naval Asylum at Philadelphia, forerunner of the Naval Academy, his tolerance of the cadets' mischief defies credibility). He could be a snob socially and was noticeably ill at ease with those whom he considered his inferiors. Yet he was devoted to his family (though he himself never married) and to his younger officers. As he grew older, he apparently mellowed. His fellow officers respected him; his sailors came close to loving 'the old man.'

The author is to be commended for an excellent biography which is long overdue. The book is attractive with several useful illustrations. Although the earlier chapters are a bit tedious, the pace quickens with Long's humorous account of the 1823-1824 voyage of *Congress* with Caesar A. Rodney's large family aboard (pp. 113-24). In the final chapter, the author offers a useful assessment of Biddle's strengths and weaknesses, successes and failures.

JOHN QUENTIN FELLER, PH.D.

University of Scranton

DONALD G. SHOMETTE, *Shipwrecks on the Chesapeake, Maritime Disasters on Chesapeake Bay and Its Tributaries, 1608-1978* (Centreville, Md.: Tidewater Publishers, 1982). 6″ x 9″, cloth, 324 pages, 17 illustrations, 5 maps, appendix, index to losses, notes on chapters, bibliography, general index. $18.50.

With the statement in this book that the listings of shipwrecks 'have been fully documented as far as possible from original source material' and some of those entries are from correct information from some of my books and appear incorrectly here, I can only lose heart in the volume at the outset. And when an apology is made that engravings used as chapter headings are mere decorations and not depictions of specific events, and those illustrations are totally out of place as being associated with Chesapeake Bay, as is the dust jacket scene, I become suspect of the entire volume.

The first entry in the book, what the author claims to have been the first recorded maritime disaster in Chesapeake Tidewater, the loss of a skiff with a party of eleven colonists, occurred at Jamestown in 1608. But the tale really gets started in the colonial era. Unfortunately, most of the ships are unidentified and their loss sites placed at the Virginia Capes, James River, Kent Island and other vague locations not pinpointed.

Cornwallis' fleet of burned ships at Yorktown, Virginia and other revolutionary-period shipwrecks are discussed, working up to the War of 1812 and the loss of Commodore Barney's barges in the Patuxent River, Maryland. The author had dived on submerged hulks purported to be of the latter fleet.

With the emergence of steam vessels in the Chesapeake in 1813, holocausts begin with boiler explosions. Merchant and naval vessels add their timbers to the bottom of the bay and rivers, bringing the reader up to the Civil War. Nothing too new here in the Potomac and James rivers, and Hampton Roads with the sinking of *Congress* and *Cumberland* by CSS *Virginia.*

What the author labels the 'Modern Era' introduces the most original material, that of diving on a hulk in the upper Chesapeake, off Poplar Island, Maryland. A cache of molasses pitchers, a steam whistle, and other items are recovered from what is believed to be the remains of the Baltimore Steam Packet Co. screw steamer *New Jersey,* sunk in 1870. With information from contemporary news accounts, this proves to be an interesting chapter. Other well-known Bay steamboat losses, *Wawaset, Louisiana, Express,* and *Three Rivers* are covered. The book concludes with the loss of the dude-cruising ram schooner *Levin J. Marvel* in 1955 and the Coast Guard Cutter *Cuyahoga* in 1978.

At the end of the volume there is a 'Chronological Index to Documented Vessel Losses in Chesapeake Tidewater' giving the dates and location of loss, vessel name, and type, taking up forty-six pages. Even so it is far from complete considering the availability of information if more research had been done. No mention is made of the loss of the steamer *Wyanoke* in the James River in 1896. Also lacking is the sinking of the full-rigged ship *Maria Borges* off Newport News in 1922. Farther up the James River are the remains of the barkentine *Marsala* and the down-easters *I. F. Chapman, E. B. Sutton,* and *Luzon.* Ignored are the four-masted schooner *Charles H. McDowell* near Norfolk and the many hulks in the marshes of North Landing River, Virginia, south of Norfolk.

The Baltimore harbor holds the hulks of the four-masted schooners *Purnell T. White* and *Katherine May* nearby, along with the steamboat *District of Columbia.*

In Curtis Creek, Baltimore, are a number of World War I-built wooden steamer remains and more of that type met their end in the Potomac River, which is also the resting site for the four-masted schooners *Emerett* and *Ida S. Dow*. But Shomette's readers will never learn of these.

There are ship name misspellings, wrong locations, inclusion of vessels indicated as lost off the Virginia coast, and even one in North Carolina. One schooner he lists as being abandoned off Cape Henry actually rests on the bottom of Boothbay Harbor, Maine. Most of these errors are due to carelessness but the last one is due to lacking knowledge of maritime history and accepting what he reads, a fault of far too many writing maritime books today.

This book will serve to introduce some readers to the Chesapeake's past but there are too many gaps in it to be considered comprehensive.

ROBERT H. BURGESS

Newport News, Virginia

RHYS RICHARDS, *Whaling and Sealing at the Chatham Islands* (Canberra: Roebuck Society, Publication No. 21, 1982). 7″ x 10″, cloth, 74 + 90 pages, 45 illustrations, 3 appended tables, bibliography, index. $18.95 NZ (U.S. $15.00).

Serious students of the maritime history of Australia and New Zealand know well the 'Roebuck Series,' for over the years it has filled numerous gaps, not least those concerning the Bass Strait, Kangaroo Island, and the Furneaux Group. An indispensable item is the two-volume catalog of shipping arrivals and departures at Sydney, 1788-1840. To this series Rhys Richards has added an important work which extends the geographical reach of these volumes to the Chatham Islands, some 500 miles east of New Zealand. In this context, Richards' work is an extension of the pioneering histories of Robert McNab, particularly *Old Whaling Days* (1913).

The requirements of such a study are daunting indeed. As Richards makes clear, searching the records of Australia and New Zealand would have produced not nearly enough information. It is a tribute to the author's love of his subject that for years he has spent what time he could spare from New Zealand diplomatic postings to mine the logbooks of New England libraries (many are now available in selected Australian-New Zealand libraries on microfilm). Richards' accumulated expertise will come as no surprise to readers of *American Neptune:* see his 'The Journal of Erasmus Darwin Rogers, the First Man on Heard Island' (41:280-305).

His new book is actually two short separate studies. That on sealing was essentially completed in 1972, that on whaling five years later, with the whole coming together only in 1982. Such delay in other circumstances might undermine a book's utility, but not in this case. It is, and will remain, a comprehensive chronological record of all known activities in these trades. Richards readily admits his study is not heavily analytical, but where his evidence permits he is clear upon the role of the islands in sealing and whaling and of the trades upon the islands. Much of course will always remain unknown, due to the scarcity of records. Sealers always were reluctant to reveal the sources of their supply, and while whalemen more commonly kept logbooks, many have disappeared and many more of the roughly 3,200 voyages for which logs or journals remain are uniformative, to say the least.

Still Richards is able to conclude that the first sealers reached the Chathams between their 1791 discovery by W. H. Broughton in the armed tender *Chatham* and 1804, by which year there are good reasons to conclude that an American sealer had reached the islands. As with all New Zealand's outlying rocks, the rush soon followed for sealskins and, when fur seals were exhausted, for 'oiling' or sea elephanting. Sealing at the Chathams lasted longer than elsewhere, but still the trade was ended by 1844. Along the way, however, the effects upon the indigenous Moriori population were disastrous, not least through facilitating an invasion of the more warlike Maoris who conquered the islands in 1835.

Far more Americans were involved in whaling on the 'Chatham Grounds,' generally east and north of the islands themselves. This area soon became a favorite locale of whalers, particularly in the early 1840's. The grounds were rich, and masters found the harbor of Waitangi most useful for refit and 'recruits,' meaning pigs and potatoes. Before the trade fell off twenty years later, Richards concludes, at least one of every twenty American whale vessels in New Zealand waters, and often a good many more, visited the Chathams. Since whalers also developed close-in 'bay whaling' and shore whaling stations as well, their effect upon Moriori and Maori alike only took up where that of the sealers left off. Bay whalers were notoriously lawless—'proverbially the most abandoned ruthless set of fellows that frequent the islands in these seas,' wrote a Wellington journal in 1841 (page 23)—and it was some years before New Zealand authorities were able to assert control. Among the seal-

ing and whaling records, in other words, lies a good deal of social history as well.

A few problems remain—such as the repetition on page 36 of the whaling account of an entire paragraph which occurs on page 34—but they are more than compensated for by the useful bibliography and the most interesting collection of maps and photos (another feature of the Roebuck series). Though Richards closes with an appeal for further research, it seems likely that little more will be uncovered on whaling and sealing in the Chathams. In short, the book belongs in every collection concerned with sealing/whaling or the waters of New Zealand in general.

BRITON C. BUSCH

Colgate University

M. S. KLINE AND G. A. BAYLESS, *Ferryboats: A Legend on Puget Sound* (Seattle, Washington: Bayless Books, 1983). Cloth, 401 pages, lavishly illustrated with black and white photographs. $39.95.

It was with great nostalgic enthusiasm that I launched into *Ferryboats: A Legend on Puget Sound*. As a Washington State native and frequent cross-sound traveler, I have long felt that this area of America's maritime culture was sadly neglected in both the popular and the scholarly literature.

A brief glance told me that the book was a visual treat, from the beautifully designed and printed jacket and endpapers on in. Especially thrilling was the large number of historic photographs, and indeed they are the major reason that ferry buffs, like myself, will relish this book.

Largely from the collection of William O. Thorniley, the photos are rare gems. Though the identifying captions are inconsistent and, in many instances, inadequate, the photographs are able to tell a story with tremendous visual impact—from ferry magnate Charles Peabody in Pioneer Square, to the devastated hulk of *Golden Bear*, to today's ferries at the Seattle terminal.

The text is weaker than the photos it accompanies. The authors, M. S. Kline and G. A. Bayless, compiled a tremendous amount of material, all of which is worked into the wordy and often confusing text. The historical chronology, especially, suffers from this editorial indiscretion. Vessels and persons that are introduced to illustrate or clarify a particular historical event or era are traced, out of context, up to the present before the narrative jumps back to the time period in question. Constant meandering through the decades left this reader frustrated and puzzled, especially in the early chapters.

There is a greater cohesion and organization in the later chapters, and the authors do a good job describing the complex period from unionization to the take-over of the ferry system by the State of Washington. One chapter in particular stands out, in which the career of the extraordinary vessel *Kalakala* is traced. The combination of historic photographs and informative text gives the reader a nice feel for *Kalakala*, which was considered a minor marine miracle in 1935, and today sits on the Alaska shore as a crab processing plant.

I closed the book with mixed feelings. The subject is so interesting, and the photographs so appealing, that they deserve a tighter text. Kline and Bayless have not defined their audience carefully enough. There is too much extraneous detail to be easily readable, and yet it is difficult to excise pertinent historical information for serious study due to the text's tendency to degenerate, at times, into a descriptive prose style that is more reminiscent of gothic romance than maritime history. This is especially disconcerting given the amount of loving care and the hours of hard work that obviously went into the preparation of the manuscript. All of the historical data is present, but it needs a more straightforward approach. A reorganization of the text, with more material relegated to the excellent appendices, is called for in the second edition.

MARY MALLOY

Peabody Museum
Salem, Massachusetts

PHILIP CHADWICK FOSTER SMITH, *The Empress of China* (Philadelphia: Philadelphia Maritime Museum, 1984). 7¼″ x 10¼″, cloth and paper, xvii + 331 pages, 71 illustrations including 6 maps, bibliography and notes, index. $35.00 cloth; $17.50 paper.

The first ambitious maritime enterprise of the newly independent United States was the voyage of the ship *Empress of China* from New York to Canton and back in 1784-1785. It was originally conceived as a venture to be financed by merchants of Boston, New York and Philadelphia, but the Boston support never materialized and the most notable backer was Robert Morris of Philadelphia. A remarkable number of the men connected with the enterprise were members of the Order of the Cincinnati. The China trade had been closed to Ameri-

cans as long as they were British subjects due to the monopoly held by the East India Company, but once independence was achieved there was no obstacle to engaging in it—no obstacle, that is, except for the large investment required and the ignorance of American merchants and seamen of the conditions to be encountered.

The plan to enter the China trade developed quickly after the end of the Revolutionary War. *Empress of China* was selected to make the first voyage with a cargo of ginseng and silver coin. She was commanded by John Green, an officer on leave of absence from the Continental Navy. Sailing from New York in February 1784, the ship had an uneventful voyage of 188 days to Whampoa, the anchorage for foreign vessels down the river from Canton. After four months occupied in landing and disposing of her cargo, and loading another consisting mainly of tea, silk, and cotton cloth, *Empress of China* sailed for New York where she arrived safely on 11 May 1785. The voyage produced a return of between 25 and 30 percent on the investment, and was the precursor of many more. The financial arrangements involved in outfitting and obtaining her cargo were extremely complex, and one of the principal backers decamped abroad while the ship was on her voyage. Thus, despite the overall profit, there was a vast deal of controversy attending the venture, and this led to litigation which continued for years after the ship's return.

This assembly of the surviving records of the epoch-making voyage of *Empress of China* is the work of Philip Chadwick Foster Smith, curator of the Philadelphia Maritime Museum. Prior to going to Philadelphia, Mr. Smith was curator of maritime history at the Peabody Museum of Salem and managing editor of the *American Neptune*. He already has to his credit ten books and edited works in the field of maritime history.

Although the major records extant of the voyage of *Empress of China* have been known and published before, they have appeared in various and sometimes unlikely places and without benefit of careful, scholarly editing. Mr. Smith's bibliography indicates the wide net which he has cast for any material relating to the voyage or the men associated with it. He presents this in full and in generally chronological order with his own narrative and analysis interspersed. Thus the book is primarily a publication of the source records of the voyage, its antecedents, and its results. The sea journal of Captain Green and the much livelier narrative of Samuel Shaw, the Supercargo, form the major part of the text, but they are supported and amplified by numerous letters, legal documents, and newspaper extracts which bear on the venture.

Mr. Smith has annotated the documents with care, and often his notes are so interesting that this reviewer was annoyed to find them located at the end of the volume necessitating constant referral back and forth. The five appendices contain additional documents on the voyage and *Empress of China*'s cargo. The book is splendidly illustrated with reproductions of contemporary paintings, documents, photographs of Chinese export porcelain, and six useful maps prepared by the author. It is an outstandingly fine piece of bookmaking printed by the Meriden Gravure Co. and bound by the Stinehour Press. In every way it is a fitting commemoration of the opening of American trade to the Far East by *Empress of China*.

JOHN HASKELL KEMBLE

Pomona College

WARREN F. SPENCER, *The Confederate Navy in Europe* (University, Alabama: The University of Alabama Press, 1983). 6½″ x 9½″, cloth, xii + 268 pages, notes, bibliography, index. $19.95.

Professor Spencer's book is a long-overdue explication of the *whole* story of the successes and failures of those generally efficient and hardworking officers sent to France and England by Secretary Mallory from 1861 onwards to procure vessels for the Confederate States Navy.

Outstanding among those officers, and one who saw the largely unproductive proceeding through to the end, was James D. Bullock, who in 1883 published his monumental memoir *The Secret Service of the Confederate States in Europe, or How the Confederate Cruisers Were Equipped*. While that two-volume work is exhaustively mined by Spencer, he goes further in showing, the reviewer thinks without question, that British and French obduracy toward success of Confederate naval procurement was not based upon expediency as has been often claimed, but upon principles of international law which those nations knew they would violate at their peril. For while it is true that the famous raiders—*Alabama, Florida* and their sisters—got away by stealth and cunning, not one of the several destined for combat against United States forces in American waters was ever commissioned.

This book, like so many others in recent years dealing

with the acute procurement problems of the Confederate navy 1861-1865, leaves one feeling rather sad that such energy was expended by so many vigorous and competent men—to attain no purpose.

JOHN C. BOWER, JR.

The Bostonian Society

D. V. PROCTOR, editor, *Ice Carrying Trade At Sea* (London: Trustees of the National Maritime Museum, 1981). 8″ x 11½″, paper, iv + 55 pages, discussions, notes, illustrations, maps, graphs. £4.15.

This is the heavily edited—or so I am told—proceedings of a symposium held at the National Maritime Museum at Greenwich on 8 September 1979. The papers read were *The East Coast Ice Trade of the United States,* by W. J. Lewis Parker, *The East India Ice Trade,* by W. H. Bunting, *The Norwegian Ice Trade,* by Professor Tore Ouren, and *Concentrated Wenham: New England Ice in Albion,* by P. C. F. Smith.

Captain Parker gives an account of the business dealings of that remarkable entrepreneur Frederick Tudor, from the unhappy beginnings of his West Indies ice trade in 1805, through the miraculous delivery to Calcutta in 1833, and subsequently to other East India ports. As well, Parker relates the machinations of Charles Morse, 'The Ice King,' and of how he eventually captured the whole East Coast market.

Bunting's paper expatiates on Tudor: for example, the delightful quote from his *Ice House Diary,* 'The frost covers the windows, the wheels creak, the boys run, winter rules, and $50,000 worth of ice floats for me upon Fresh Pond.' Bunting relates how, by 1850, ice had become a necessity to the British in India, and that by 1877 there had been built for the Tudor Company three vessels especially designed to carry ice thence.

Professor Ouren relates how, in 1822, the first ice was shipped to England from Norway, and how, by 1850, there existed a brisk trade which flourished until the turn of the century.

Chad Smith gives still more information on Tudor in India, but concentrates upon the trade started by Charles B. Lander to England in 1844, specifically of ice from Wenham Pond, in Essex County, Massachusetts (beside which, it might be mentioned, Smith's family home rests). He adds, however, that by 1850 the trade to England had practically ceased, being superseded by the Norwegian product, cut from the waters of Lake Oppegaard near Oslo, renamed, for healthy business reasons, 'Lake Wenham.'

JOHN C. BOWER, JR.

The Bostonian Society

BARRY GOUGH, *Gunboat Frontier: British Maritime Authority and the Northwest Coast Indians 1846-1890* (University of British Columbia Press, Vancouver, B.C., 1984). xvii + 287 pages, illustrated.

Professor Gough has completed his trilogy of maritime history relating to the West Coast of North America. As is usual with all of his historical books it is written with enthusiasm and with carefully documented research. In this instance using collections hitherto unused the author concentrates on the British navy and the Indian peoples.

First it was the Hudson Bay Company that had to deal with the local inhabitants. The company had long experience and relations between their employees and the Indians were guarded but satisfactory. With the establishment of the Colony of Vancouver Island and its neighbour, the Colony of British Columbia, thereafter the navy took charge. The imperial authority was far distant and used largely to providing only a general schema; it was for the men on the spot to make the decisions. All the naval officers knew was that they were to maintain law and order—and it was British law and order that was required. Consequently there was a certain lack of sympathy between the white man who believed in his mission to civilize and the Indian whose way of life was being undermined.

The Indians were not passive; they resisted when it was possible and a number of skirmishes resulted. In the end the Indians were defeated and the navy became effectively a highly successful policeman which made coastal travel without hazard.

After British Columbia joined the new dominion the imperial role naturally diminished. Ottawa took charge. The navy ceased to cope with the punitive actions against the Indians. On the whole the paternalistic role that had been played by the imperial authority had been quite successful. The civil servants in Ottawa never really had the same feeling for the native peoples. The Indians very properly harboured grievances of broken promises. Gunboat diplomacy had been replaced by indifference and unconcern; the new Canada was marching to a different dream.

The book is handsomely illustrated. The notes are in-

structive and informative and the bibliography is a model. This is a good book and one to be recommended to all enthusiasts of maritime history.

S. W. JACKMAN, PH.D.
University of Victoria, B.C.

ROBERT R. REA AND JAMES A. SERVIES, *The Log of H.M.S. Mentor 1780-1781* (University of West Florida, University of Florida Presses, Pensacola, Florida, 1982). xi + 207 pages, illustrated. $11.75.

Logbooks have a particular fascination to the professional seaman; to a lesser extent they attract the historian. The latter hope to glean from these nautical accounts the precise details of maritime life for different purposes. Unfortunately many votaries of Clio assume that a log is a rather full report of daily occurrences when in fact it can best be compared to 'journal minutes.' Events are reported usually in the sparger of language and it requires a keen imagination to be able to fill in the specific details. A reader of the Log of H.M.S. *Mentor* alone would not generally be overly entertained and would often be lulled to sleep by the daily reports of wind and weather. Only occasionally does the log move from the following sort of information: 'Moderate breezes and fair weather, A.M. sailmakers employed as before. Fitted a new main topsail type, A.M. sailed the armed brig Felicity for Jamaica.' (Thursday, May 23, 1780.)

It requires the efforts of a good editor to make such information come alive and Robert Rea and James A. Servies have done a good job of providing factual background and a coherent account of H.M.S. *Mentor* and her crew. The story they tell is an interesting one of a naval sideshow in the days of the American Revolution. In addition they provide useful information about the captain and the crew and of the ship itself. Indeed, the illustration of the vessel—both elevation and cross section—make one understand the special situation of this ship and its activities. The edition should be commended for the excellence of their notes and for the glossary of technical terms. As an addition to the maritime history of the American Revolution this is a useful book. The editors do not make undue claims as to its readability but instead present it as an edited document which can be used by other scholars who wish to use such a source for further research and one which is not readily available in most libraries. This is not a book for the amateur maritime enthusiast but rather for the professional who will use it precisely for the purposes for which it was produced. To have a detailed narrative account of the activities of H.M.S. *Mentor* and her role in the wider scheme of naval history one will perforce look elsewhere.

S. W. JACKMAN, PH.D.
University of Victoria, B.C.

PAUL KENNEDY, *The Rise and Fall of Naval Mastery* (Robert E. Kreeger Publishing Co., Malabor, Florida, 1982). xviii + 405 pages.

It is a brave man indeed who is willing to try and give a coherent and concise history of British maritime power from the end of the fifteenth century to the day before yesterday. Such historical narratives are generally unfashionable and unless done with real skill tend to be condemned as mere 'popularizing.' In the present work Paul Kennedy has triumphed over the many obstacles and pitfalls to produce a highly informative and readable book.

The reader will not find in this volume a series of biographical sketches of individuals nor a narrative account of battles won and lost. It is not the author's intention to write a social history with a naval bias; rather he wishes to pose some of the same questions asked by Alfred Thayer Mahan on what were the limits, goals and results of 'sea power' to a society and to a country's national schema. Commercial enterprize conjoined to industrial powers forced Britain to change from being a small island off the coast of Europe and to become an imperial power. In so doing, wealth was closely related to naval paramountcy. With the latter came a series of assumptions that governed British policy all over the entire earth. The idea that Britain was European was replaced by the idea that she was a global state. This could only be sustained by industrial dominance, once lost the British could no longer act upon the adage that 'it's very, very funny when you have lots of money to be horrible to those who have none.' Economic decline forced a readjustment in thinking and the latter was directly reflected in loss of naval and maritime supremacy. Britain's position as an arbiter in the international power game became less significant and less forceful. The story of the rise and decline of a great nation is here closely related to 'The influence of Sea Power Upon History.'

To understand the questions posed by the author one only need read his answers to the basis of British world supremacy. The navy 'became the protector of maritime commerce, the defender of British interests in regions where government appeared to be lacking, a "police-

man" to a certain extent, but also a surveyor and a guide. And never at any time did it lose its role as the major instrument of the government's foreign policy.' British power was merely a reflection of the industrial and economic leadership; once countries like the United States and Germany with great natural resources destroyed the dominant position in international trade maritime sovereignty and with it international pre-eminence vanished. The great naval review of the Diamond Jubilee was probably the symbolic apogee of 'Britain pre-eminent.'

The First World War, the interim of 1919 to 1939 and the final flowering in the Second World War tells a sombre story. It is a sad account but hardly a surprising one. The author deals with the subject matter very skilfully and his conclusions in an 'Epilogue' are poignant. At least the end of empire and all that went with it was done with dignity and grace. Few imperial powers have been so fortunate.

S. W. JACKMAN, PH.D.

University of Victoria, B.C.

CLINTON H. WHITEHURST, JR., et al. *The United States Merchant Marine* (Annapolis: Naval Institute Press, 1983). 6¼" x 9¼", cloth, xviii + 314 pages, illustrations, tables, graphs, 8 appendices, notes, bibliography, glossary, index. $27.95.

That the word 'polemic' has, in recent times, acquired a pejorative connotation appears to be a function of its being used by proponents of lost causes. Within that context this book is a polemic of the first order, for it advocates creation of a large versatile United States merchant fleet supported by government funds but devoid of federal regulation except in wartime. As support for this view, there appears in every chapter the justification of preparedness for war. Take, for example, this timely paragraph from chapter nine (p. 91):

> One might think that the 1982 British-Argentina Falklands conflict sharpened perceptions of the woeful inadequacies of our sealift capacity, but it did not. In an apparent attempt to discredit any administration effort to promote the American merchant marine, the Office of Management and Budget . . . in May 1982 circulated a staff memorandum . . . [which] concluded, with a self-assurance that is frequently derived from profound ignorance, that there is little justification for . . . the United States to support a merchant fleet.

While this myopic viewpoint is effectively refuted in detail in Chief of Naval Operations Admiral Holloway's reply (Appendix F, pp. 264-68), the thoughtful reader of American maritime history is left with the impression that the admiral's reason and advices will have fallen upon deaf ears, or, more to the point, upon ears that refuse to hear.

The principal thesis of this book is that if the United States doesn't get off its duff it will find itself in a logistically vulnerable position in the event of a NATO general conflict or Middle East confrontation. It suggests that if we do not scuttle the much-amended Jones Act of 1920 —now an omnibus profoundly out of date—and face the realities of vessel procurement and manning imposed by the economics of the 1980's, we will find ourselves lacking naval auxiliaries and common carriers when the need for them arises. The book makes a forceful argument that there will be no catch-up time granted us, as was the case in World War II, a war won as much by our overwhelming sealift capacity as by force of arms.

This reviewer is not prepared to cavil at the faulty statistics that mar chapters fifteen and twenty, nor am I going to take issue with some minor historical beers. Such faults seem to appear in every pathfinder, which is what this book is: one of convincing substance, one which covers new ground, and for these reasons should be praised, polemic though it is. Yet one despairs that it will reach those readers who are in position to shape events: to ensure our country the healthy merchant marine it needs now and in the future.

JOHN C. BOWER, JR.

The Bostonian Society

COLIN WHITE, *Victoria's Navy: The Heyday of Steam* (The Naval Institute Press, Annapolis, Maryland, 1983). 176 pages, illustrated. $19.95.

This is a handsomely illustrated book, but it is not for the specialist. It is informative, agreeable, well written and pictorially fascinating. From the text it is evident that the author is knowledgeable and that he has done a great deal of work to ensure that his narrative contains no egregious errors. It must be said, though, that the text makes no demands on the intellect but for the amateur maritime enthusiast it provides an agreeable introduction to what might well be an overly technical subject.

The major value of this volume comes from the excellence of the illustrations. They have been collected carefully and imaginatively and from a great variety of sources, both public and private. The captions are concise but properly informative and the whole is an ex-

cellent example of popular history produced in an attractive format. As stated, the scholar will have to look beyond this book to comprehend more fully the fundamental changes in naval architecture that come with steam power. Further, the explanation of the implications of steam on the larger diplomatic and colonial scene is not overly profound but touches on the obvious elements adequately. As a present for the naval 'buff' one could not do better than to give this book to celebrate a festive occasion or maritime anniversary.

S. W. Jackman, Ph.D.
University of Victoria, B.C.

Carl Olof Cederlund, *The Old Wrecks of the Baltic Sea; Archaeological Recording of the Wrecks of Carvel-built Ships* (Oxford, British Archaeological Reports, 1983). 8¼" x 11¾", paper, 239 pages, maps, plans, and drawings, photographs, bibliography, appendix, index. UK £9.

Over the past century, the Baltic Sea and its ancient and modern coastlines have yielded many of Europe's most spectacular and complete shipwreck finds. The cold brackish water with its attendant freedom from teredo worms, the silty sea bottom, peat bogs, and clay beds have provided very favorable conditions for the preservation of wooden artifacts, including wrecked ships and boats. The quantity and diversity of material is a reflection of the great volume of waterborne commerce in the Baltic, not just from and on account of the ports lining this sea, but also of the large numbers of trading vessels from other European maritime regions. Since the Viking period, the Baltic has been a concourse of shipping routes to and from ports in northern Europe and even Asia, via the western rivers of Russia. Such a geographical setting with its unique physical properties cannot help but provide a unique laboratory for underwater archeologists with profound implications for the future of that science and of European maritime history.

In confining this study to carvel-built watercraft, the author focuses on vessel types from the past four centuries, with particular emphasis on the seventeenth century. This is no doubt due to the preponderant numbers of wrecks in Swedish waters from this period and the author's close association with the surveying and raising of many of them. Because the Viking ship finds in Norway and Denmark have made lapstrake hull forms dominate most people's conceptions of Baltic ship finds, this book does much to correct this imbalance and bring the picture of marine archeology in Scandinavia more up to date.

Since his early experiences in underwater excavation of the Swedish warship *Vasa,* the author has been in the forefront of this activity as practiced and developed in Sweden since the early 1960's. Cederlund's writings occupy a very considerable part of the bibliography and references in this book, and from the small sample this reviewer has been able to inspect, the quality is as impressive as its quantity. It would indeed seem that Cederlund has done as much to shape the course of Swedish underwater archeology as he has to write about it.

Thematically, this book is a survey, in the sense of an overview, of the current state of underwater archeology as developed and currently practiced by nations surrounding the Baltic. Considerations are geographical, historical, cultural, and procedural. Recent progress in this field by Denmark, Finland, Poland, East and West Germany, and the Soviet Union is described, but Swedish activities are described in separate chapters and in much greater detail. This is hardly surprising, due to the early start in this field enjoyed by Sweden; indeed, the reports on any activity of this kind from eastern bloc countries must be viewed as welcome news.

Historical consideration of this subject is not just in the sense of maritime history pertaining to the wrecks in question, but to the history of underwater archeology itself as it developed in Sweden from the mid-nineteenth century to the present. Early attempts were in part derived from efforts to clear naval installations of underwater obstructions and from excavations of urban waterfronts for redevelopment. By the first decade of the twentieth century, parts of wrecks were regularly exhibited to the public, and by the 1930's, excavations were carried out according to systematic guidelines and with attendant scientific analysis. Achieving long-term preservation of objects made slower progress and even today presents serious problems. The origins of Swedish underwater archeology thus lie in the remains of post-medieval Baltic shipping and in the framework of modern European history. If other fields of archeology are plagued with questions over the relationship of archeology to anthropology, this one is not. The debt to history and maritime historians is obvious, while in turn the archeologist has found a comfortable niche in Swedish maritime history by providing the answers to so many problems that have dogged historians.

Cultural considerations range from historical problems and solutions posed by the wrecks themselves (i.e., the clues they offer to the life-styles of crews or of the

producers and intended consumers of the cargoes) to the impact of these finds on modern society. The latter is not so far-fetched when one considers how the teaching of Swedish history has gone from the tedium of 'kings and wars' to a broader consideration of the Swedish people in all walks of life, including maritime history in its mercantile aspects. The sailors' sea chests and their contents recovered from *Vasa* probably drew more public and scholarly attention than her massive armament.

The largest portion of the text is devoted to procedural considerations: investigation, identification and classification, recording, protection and preservation, reproduction, and research methods. Techniques are described broadly and concisely, but the author is much more concerned with the guiding principles and professional standards by which improved results can be realized. The most persistent objective of any phase of underwater excavation is to have as much information as possible about the remains in question, drawing on whatever source is likely to be useful to this end. Cederlund is no slave to the published record and it is refreshing to read insightful discussions of ships' plans, ship models, surveying methods for drawing lines plans of excavated hulls, and other subjects which emphasize the necessities of geometry and mensuration in analyzing and reconstructing vessel remains.

Recognizing the fact that the growing numbers of known wrecksites are far beyond available resources to raise and preserve like *Vasa,* Swedish archeologists have pressed to develop techniques for surveying hulls *in situ* with minimal movement of material. Procedures have also been formulated for returning raised wrecks and wreck fragments to the seabed when this alternative appears to be the best one for long-term preservation. There are even methods for reinforcing fragile hulls to retard further disintegration. Perhaps the greatest successes are in the protection by national law of wrecks and sites from looting and damage by sport divers, and strict enforcement seems to be working. Preferring the carrot to the stick, state agencies are encouraging the education of sport divers in the historical value of wrecks and in the fine points of searching for ship remains without disturbing them. In so doing, they have recruited a sizable amateur task force which is able to accomplish many minor tasks that would otherwise be neglected, thus turning a potential problem into a valuable asset.

The latter half of the book is devoted to an appendix titled 'Catalogue of the wrecks of carvel-built ships along the central Swedish Baltic coast.' These wrecks range in condition from fragments scattered over the bottom to virtually intact hulls, some of them even retaining their spars and fragments of rigging. *Vasa* is the most prominent and thoroughly studied example in the latter category, but the surveys of the other finds, even if in poor condition, are surprising in the amount of information they have yielded. Given the riches recovered from this small segment of the Baltic coast, one can readily conclude that many more surprises are in store as other areas receive similar attention. This reviewer cannot resist the pipe dream that somewhere lie the remains of one or more American merchant vessels from the late eighteenth or early nineteenth centuries, laden with all sorts of answers to questions about hull form, construction, and fittings. If one of these should prove to have been the subject of a surviving portrait by Roux or some other great port painter, so much the better.

The broad scope of this book, coupled with its many illustrated examples and detailed discussions, calls for slow and careful reading. Nowhere else is one to find, in the English language at any rate, such a thorough examination of what has been accomplished in the Baltic and how. Such compression of subject matter has undoubtedly forced this book's unusual organization and topical sequence. It seems to reflect, nevertheless, the author's own very purposeful sense of priorities, even if that sense is highly individualistic. Swedish activity in this field must be assessed from the viewpoint of Swedish maritime history and the activities of its scholars; this will seem very foreign from the viewpoints of American anthropologists, but American maritime historians ought to be quite envious of the results. Given the unique conditions in which these wrecks were preserved and the pioneering efforts of Swedish archeologists to examine them, it is most important at this time to study these methods and principles in detail. Ultimately that means examination and translation of Swedish language material which this book only begins to describe.

ERIK A. R. RONNBERG, JR.

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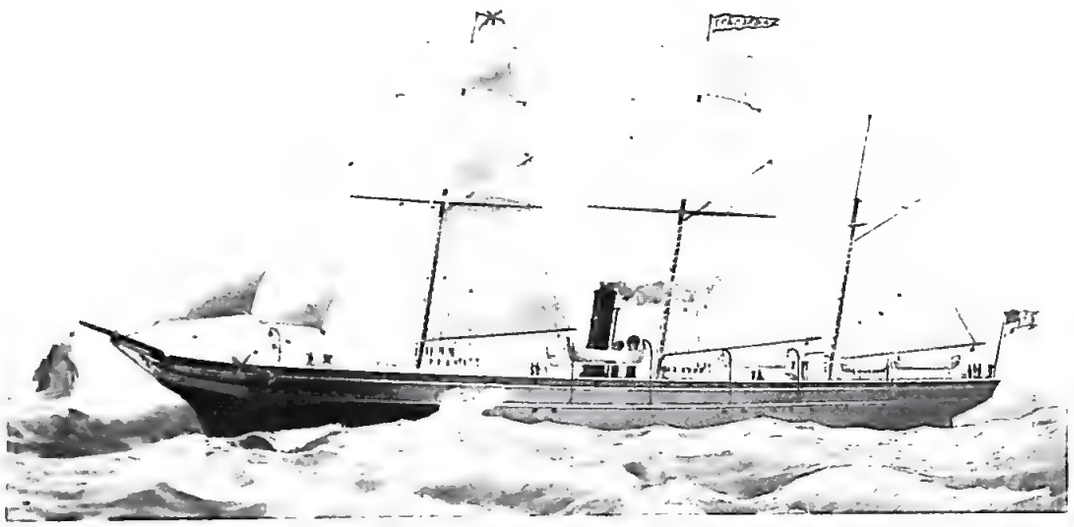

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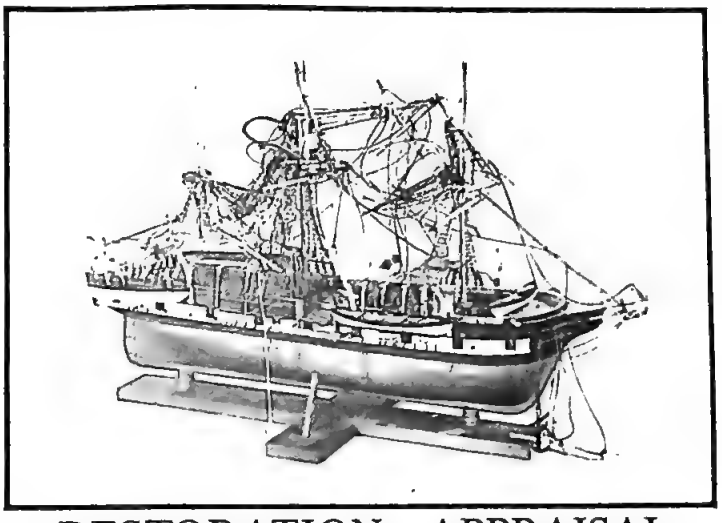

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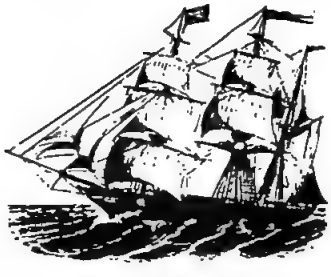

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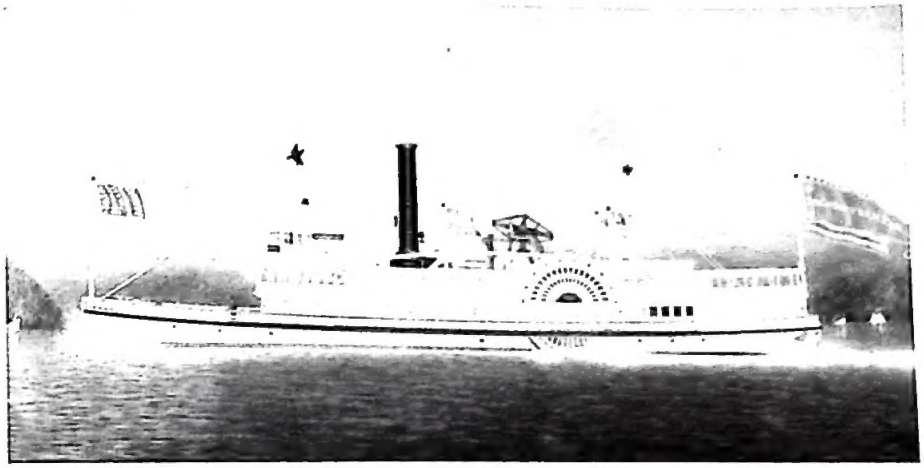

James Bard (American, 1815–1897) *Jacob H. Tremper,* 1885
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